THE THEORY OF NESTING SOLIDS

I believe that the author's basic approach is correct. There are too many coincidences between the number of vertices in the Platonic Solids and the order of elements in the Periodic Chart for the idea to have no validity.

I have made a major change in this theory. I have proposed that protons can nest in the center of the solid's face in addition to nesting at its vertexes, as the author proposes. The reasons for this will become apparent as my theory unfolds.

If the proton nests on a solid face instead of a vertex then we have two separate geometrical systems that can be used to describe the Mendeleev Chart. Also, the order of completed elements changes from "O-Si-Fe-Pd" to "C-Si-Fe-Pd." The first solid, the cube, has 6 faces and makes the element Carbon (Z=6) extremely stable. The next three "geometrical elements," Silicon, Iron, and Palladium, are the same in both systems.

I would also propose the existence of two additional non-Platonic but regular solids that are based upon the icosadodecahedron and the cuboctahedron. The first is the fullerene geodesic, which has 32 faces and is the sum of the dodecahedron and icosahedron. The second is what I will call the "zeolite geodesic" or "zeodesic" for short. This solid is a combined cube and octahedron.

The geometry of the zeodesic is based on that of Zeolite crystals. These crystals have 14 faces, 6 of which are squares and 8 of which are hexagons. The fullerene geodesic has 12 pentagon and 20 hexagon faces for a total of 32 faces. Both of these hybrid solids can be used to explain several properties in the Periodic Chart which Moon's system is unable to explain.

The two theories are identical from Hydrogen to Palladium. to the element Pd, which is the midpoint element in Moon's chart of the elements. Moon points out that Pd is the first element that has zero electrons in its outer shell, an anomaly that contradicts atomic theory in that most atoms have their outer shells filled with increasing numbers of electrons. However, Moon's theory does not explain why the next important transition metal above Pd, Pt also has zero electrons in its outer shell. These two elements stand alone in the entire chart of elements in this feature.

Pd is element 46, and Pt element 78, and: 78 - 46 = 32. This is too obvious to not suggest that the 32 face geodesic can be used to account for all of the elements between Pd and Pt.

The last natural element is U at 92, and: 92 - 78 = 14. Once again, it is too obvious to not use the "zeodesic" to fill in the gap between Pt and the end of the natural chart.

Moon's theory is what might be called a "dual solid" theory of the elements. He uses two groups of Platonic solids to account for the 92 natural elements. The first group of four Platonic Solids accounts for the elements from Hydrogen to Palladium, while the second set of solids accounts for those from Silver (Ag) to Uranium.

I have proposed a "single solid" instead of a dual solid theory to account for the 92 natural elements. I then go on to propose the doubling of the single solid into a new dual solid theory that predicts the existence of 170 elements instead of the current 92.

In the single solid theory, the 32-face fullerene geodesic circumscribes the four Platonic solids that Moon uses in his theory for the elements up to Palladium. This new multiple solid structure has 78 faces, which accounts for all fo the elements up to Platinum

(Z=78). The 14-faced zeodesic is added to this structure for a total of 92 faces and 92 natural elements.

The single solid theory accounts for the similarity between Pd and Pt, and has a greater symmetry in the sequence of lower elements with the C-Si quadrivalent elements than does the dual solid theory with its O-Si sequence. It cannot, however, explain some of the things that Moon explains with his dual solid theory.

The dual solid theory accounts for the known valence arrangement of electrons in the rare earth elements in the Periodic Chart, however, in a cumbersome way. Page 21 of the article describes how the second set of solids must be precisely constructed so that the 14 electrons in the rare earth subshell can be accounted for.

In the single solid theory, however, there is no 14 member electron subshell. Instead, the normal subshell sequence on page 24 (14+10+2+6 = 32) is transformed into a sequence that is based strictly on the icosadodecahedron (20+12 = 32).

The order and arrangement of elements in the single solid theory to Moon's dual solid theory are identical below the element Palladium. This is because the four Platonic Solids that describe the proton positions in the first 46 elements have a total of 46 vertexes and 46 faces. The elements above Palladium, however, are arranged into an entirely new system of organization in the single solid theory.

The existence of a dual and single solid system of geometrical organization within the atomic nucleus implies that there are two types of nuclear programming instead of one. This further implies two types of electron valence programming. Since we know of only one, the other must be unknown and undiscovered.

The single solid theory predicts that the lower half of the chart now ends with Pt instead of Pd. If this is the new halfway point in the chart, then the new chart must end with element 156 (78 x 2 = 156). However, this is not the ending sequence in the expanded chart. The 14-faced zeodesic must be added to the single solid with 78 faces to account for the 92 elements. It must also be added to the double solid in the expanded chart. This makes element 170 the last element in the new chart (156 + 14 = 170).

ADD

I looked at the tetrahedron and saw that it has a great many possibilities for combination into "elemental solids."

If you examine the basic hypothesis of the theory of nesting solids you see that the solids are only completed with a few elements. The rest of them must be part of an incomplete solid. This somehow does not seem entirely correct. If some elements are complete solids then all must be complete solids to some extent, or within some extension of the theory. What the tetrahedron does is give us a solid that can be combined in a great many ways for a complete elemental solid. I follow with some examples.

In addition to the tet and star tet, there should be a double tet, which is two tets back to back. This would technically be a "sextahedron." This solid has six faces and five vertices. It is similar to the octahedron, which is made from two back to back pyramids, except that it is two back to back tetrahedrons.

The tet and double tet define very stable states for elements. Carbon forms a strong covalent C-C bond because one is the 6 faces of a cube and the other the 6 faces of the double tet. The inert gas Neon is formed from two sextahedrons which have 5 protons at each of 5 vertices. This too is a very stable structure.

Oxygen can either be the 8 faces of the cube or the 8 vertices of the octahedron, so its covalent O-O bond in diatomic oxygen is also strong. This element can also be formed from two star tets. The large variety of solids that can form into Oxygen make this element among the most active chemically.

But problems arise for Nitrogen, which is the first of many elements that are odd numbered and do not readily fit into the theory of even solids, all of which (except the sextahedron) have even numbers of vertices and faces. To take care of this problem for the odd numbered elements (and odd numbered neutrons as well), I propose the idea of using the tetrahedron bond onto the face of the outer solid in the complex of solids.

The idea for this can be seen in diagram No. 302 from my files of over 200 diagrams at Charlson's in Minn. I did it after reading in Japan Tech how a dopant transition metal (Cu or Ag) bonds onto a layer of Carbon fullerenes.

The Japanese used one of their new high powered x-ray cyclotrons to examine the features of a fullerene surface that had a single atom layer of the dopants bonded onto it. It turned out that no matter what they did in the deposition procedure, whether they used CVD or VVD or MOCVD, the dopant metal would only bond to the fullerene surface with a tetrahedron bond over the site of a hexagon. The pentagons would not bond. This is very unusual, as metals bond in either cubic or quasicrystal patterns, never in tetrahedra or hexagon.

Using the idea of the random tetrahedron bond, you can now construct a solid for every element. Needless to say I have not done this yet for all of the elements, however, consider the extremely active element Fluorine. If it is an oxygen cube plus one tet bond, then this relates its chemical function to oxygen, something that occurs in nature as this gas is often used as a substitute for oxygen when greater oxidation reduction is required. If Nitrogen is a tet extension of Carbon then it too should exhibit some of the inert properties of this element, which it does. While F and O will react at only moderate temperatures, N requires very high temperatures to react (as in catalytic mufflers). So this too describes what occurs in nature.

I have included copies of my drawings of geodesic cells. I have been working on a theory that I am sure relates to the nestor solid theory. In it, metals can be grown into new forms that mimic the cholesterol molecule, which stores the body's memories in digital format. I have dubbed them "metols" because they are really "metal cholesterol." They are nestor solids with elements alternating between vertex bonding sites and face bonding sites. These are the materials which I believe will control nuclear reactions for energy, the weak and strong forces, and will be the basis for our future technology.

To move to another part of the chart. The correctness of the theory with respect to the neutron numbers of Palladium and Platinum is verified as the former has 60 and the latter 120 in stable isotopes. The numbers for the stable isotopes of Pt are: 114, 116, 117, 118, 120. The range of these is 6 (120 - 114 = 6). If these are two 60-vertices icosadodeca solids, then two form the highest stable isotope. If the two solids are bonded at a hexagon, then the total number of neutrons is reduced by 6 to 114. As the two solids pull apart, the other isotopes form between 120 and 114. This feature makes Pt a very stable element.

The neutron numbers for Pd are: 56, 58, 59, 60, 62, 64. This is where the theory might fall apart if it were not for the single tet bond that can hang an additional nucleon on the outside of a solid. The four stable isotopes up to n=60 can be accounted for by the complete or nearly complete icosadodeca solid. Of the two others above 60, n=62 is formed by one double tet, and n=64 by two double tets. These double tets occur on opposite sides of the solid at hexagon sites. A single tet bond would be too unstable and so cannot form.

I also took a look at the double sequence of elements, C-N-O and Fe-Co-Ni. The first is defined by the different combinations of cube, sextahedron, and octahedron. These elements are the basis of the amino acids because they are locked in by such a complex array of solids and possible solids. Sulfur also is found in two amino acids because it is an octave harmonic of Oxygen, and can be constructed from two sets of Oxygen solids. All of them are completed into the hydrocarbon structure by the tet bond of Hydrogen.

Applying the same logic to the second group of elements says that these too can be locked in by a large number of solids, and should form the basis for a new form of life that is based upon information that is stored digitally by the magnetic field of these elements. In Moon's Nestor Theory, Fe is: 6 + 8 + 12 = 26. But if the cuboctohedron is substituted for the dodecahedron, then: 6 + 8 + 14 = 28, the number for Ni. The ferromagnetic series of Fe-Co-Ni becomes identical to the hydrocarbon series of C-N-O. These are the elements that will form the basis for the new metols.

ADD

The mathematical law that governs the electron shells is in my view absolutely inviolable. It is based upon the binary series: $N = 2n^2$. Right now, "n" only reaches to 4, and the shells have the following numbers of electrons:
n = 2,8,8,18,18,32,32.
The actual order of these shells in the elements is:
2-8-18-32-32-18-8.
These add up to the last element, inert gas-118.

The equation is linear and progresses to infinity, and so the number of elements cannot be limited. It stops with n=4 right now, a number of the binary series, but likely continues at least to the next number in the binary series, n=8. The number f shell electrons would be:
2-8-8-18-18-32-32-50-50-72-72-98-98-128-128.
The inert gases for each of these additional shells occur with the following atomic numbers:

118, 168, 218, 290, 362, 460, 558, 688, 816.

The current chart ends with U-92, which is 6 elements above the last inert gas, Ra-86. The next inert gas above 118 is 168. If the chart ends at 172, then there are 4 additional stable elements beyond this.

There are 50 electrons in the next series of elements after 118. They would be arranged into the following sequence:
2-8-18-32-50-32-18-8.

The number of rare earths in the known rare earth series, La and Ac, is found by subtracting the number of electrons in the previous two shells: 32 - 18 = 14. If this rule holds for the new 50 electron shell series, then the number of rare earths is:

50 - 32 = 18. This is the number of elements that must be added to the 32-series to obtain the 50-series. This means that the rare earth series for the 50-member shell has 32 elements, 14 in the old series (La and Ac) and 18 in the new one: 18 + 14 = 32.

ADD:

I have suggested the idea of a chart based upon the number of shell electrons, as based on the equation: $N = 2n^2$, where "N" is the number of electrons in each shell, and "n" the number of shells. The chart is based upon a series of elements that ends with an inert gas, but closes with a descending series of elements that is symmetric with the ascending series that led up to the inert gas.

Based upon this equation, the shell configurations are:

For: n = 1; N = 2. The elements hydrogen and helium. There is no closure rule for this series as there are no shells with fewer than two electrons.

For: n = 2; N = 2-8-8. The series end with the inert gas argon. If closure is invoked then this series becomes:
N = 2-8-8-2, which ends with the element calcium. This series includes all biological molecules except Fe, Cu, and Zn. These are part of the next series, which has something to do with electromagnetically imprinted information.

For: n = 3; N = 2-8-8-18-18 The series ends with the inert gas xenon. The closure rule adds the following elements to this series: N = 2-8-8-18-18-8-8-2. This series ends with element number 72, hafnium. This series of elements imprints information electronically.

For: n = 4; N = 2-8-8-18-18-32-32. The series ends with the inert gas element 118. Closure extends the series to:
2-8-8-18-18-32-32-18-18-8-8-2, which adds up to element 172.

At first I only considered the binary n=2 and n=4, but later realized that the trinary number series based upon n=3 must be included as it is not reasonable to exclude it from the theory. This series ends with hafnium. I remember reading recently that the top quark that has recently been discovered has an energy of about 172 GeV. If this energy is converted into its mass equivalent, it comes out to the element hafnium. Is this another one of those meaningful coincidences? Does it mean that the n=3 series of elements corresponds to subatomic particles such as quarks and gluons? You might have to look up what the final agreed upon mass-energy of the top quark is.

It appears that the trinary series has something to do with the elements that have definite ferromagnetic, paramagnetic, and diamagnetic properties. The lanthanide rare earth elements all are paramagnetic. So too are the palladium group of elements. The platinum group of elements, which follows hafnium, are either paramagnetic or diamagnetic, as their outer electrons are so weakly held that they can either be added to or subtracted from.

ADD:

Chart is the first 20 elements, which follow the electron valence sequence: 2-8-8-2. This chart is all of the elements up to calcium. It is the "carbon information chart" because it contains the four basic ions, sodium, magnesium, potassium, and calcium, that provide the electrical charge environment (pH) for hydrocarbon life. This chart is:

H He

Li Be B C N O F Ne

Na Mg Al Si P S Cl Ar

K Ca

The elements Na and Ca are the main ones in the body's electrolytic system. But this system is more than a charging system, it also is a "liquid crystal memory system" that stores binary information in the form of electrical signals that polarize the molecule.

Na constitutes most of the saline solution salt, and forms with sterol molecules (including cholesterol) to produce the liquid crystal cholanates. These molecules can be polarized electrically to store a record of all of the body's short term events. This memory system is constantly changing and re-arranging its information content, as its liquid crystal molecules are in constant fluid motion in the cells of living things. This information is transmitted to the cell's protein and RNA molecules upon contact with them.

The information of Na is transmitted through its inherent quantum property of strong "magneto-luminescence." The +1 Na ion is the strongest absorber and emitter of photons of all of the known elements (see Handbook Chem. and Phys.). Its lone electron is strongly magnetic. This ion acts as the "tape head" of the cholanate molecule that it is part of, and transmits the molecule's information to nearby water molecules, which then re-transmit it to other biological molecules.

Although Na is mainly magnetic and luminescent, if it can achieve its +2 valence state it can temporarily become superconductive. This is when its information is transmitted throughout the superstructure of the cholanate molecules. (ref to article biological supercond.) The transformation of a +1 valence element to a +2 valence element also occurs in the strong diamagnetic elements, Cu-Ag-Au, when they occur in superconductors.

Unlike Na, Ca has only a weak magnetic state, this because its 2 valence electrons usually have opposite spins, which destroy magnetism. This type of spin state occurs in superconductive materials, but only in the +2 valence elements in these materials. These elements provide the valence electrons for the superconducting lattice structure, while the +1 valence elements (Na-K-Cu-Ag-Au) provide the conduction electrons.

The information on Ca based molecules is long term and structural. This can be seen in the structural order and durability of bone tissue. It cannot be altered by the short term Na system.

Ca forms the basis for the body's "solid" liquid crystal system, its bone tissue. It stores a record of the body's long term events in the more permanent structure of its bone tissue. When bone tissue is replaced, the memory can be changed through a process of "holographic memory exchange" where a new crystalline order is transferred holographically onto the new bone cells. This holographic implantation occurs when this ion is in its superconductive valence state, which is when its valence is greater than +2.

(Ca occurs in a specific family of superconducting ceramics).

The following section is somewhat incomplete and speculative, but follows the general guidelines of what is known about the valences of biological molecules. There are a total of 10 possible valence states for "information matter." Each of these valences corresponds to a specific information state in the living cell.

The Na ion has 10 valence states:

Na (+2, +1, 0, -1, -2, -3, -4, -5, -6, -7)

The Ca ion also has 9 valences:

Ca (+2, +1, 0, -1, -2, -3, -4, -5, -6)

The anion states of Na and Ca occur whenever information is to be picked up from the cell's alkaline biochemical. By taking on the same charge as the biochemical, they absorb its electrical information content. This content is in the form of fractional valence levels. Each level has a correspondence in the functioning of a particular biochemical system in the cell. If the charge level of a particular system is too high from its norm, then the cell is hyperactive in its biochemical activity. If it is too low, then the cell's biochemical activity is depressed.

Na and Ca are lymphatic and immune system related. Their opposites, Mg and K, are nervous system related. Mg is the dominant ion in plant life as it forms the basic structure for the chlorophyll molecule. This is the reason why plants respond to thoughts, as this same element produces the electrical component of thoughts in animal cells.

The balance between K and Na, and Mg and Ca, is important as the lymphatic system must remaining balance with the nervous system. If thought and mental activity become depressed (below norms) it reflects into the immune system, and vice versa too.

ELECTRON GEODESIC VALENCE

The theory of electron gendesic??? valence states that if the 18 member electron shell inside the outer shell is able to complete itself into a 20 member icosahedron, then the element will have greater internal energy and a lower melting point. In addition, the geodesic configuration of electrons is negative, and the element becomes an electron donor (anion) with a valence of "-20." In this state it is able to combine chemically with the various numbers of the known cations into "supermolecules."

The nesting solid of the icosahedron has 20 vertices, with each vertex acting as a nesting site for one electron. The solid is complete with 20 electrons, but incomplete if the element only has 18 or 19 outer shell electrons. The transition from incomplete to complete changes many of the elements natural properties such as its melting point and whether it is magnetic or diamagnetic.

The geodesic symmetry of valence electrons traps what is called "scalar heat" in the atom. This heat lowers its melting point (MP) as less external heat is required before the element melts.

The most obvious place that the phenomenon of geodesic electron valency occurs in the periodic chart of the elements is between the elements Au and Hg. Au has 18 + 1 = 19 electrons in its two outermost shells, and mercury has 18 + 2 = 20. Hg is the only metal that is liquid at room temp. Its completed icosahedron structure holds a great deal more internal (non-radiant) heat than does Au, which only has the incomplete polyhedron of 19 members.

The theory can be used to explain why the elements above Hg, Cd and Zn, have much higher MP's than does mercury. Hg also has the 32 member shell, which is the nesting solid number of the icosadodecahedron (12 + 20 = 32). Cd and Zn lack this added solid structure and so have less internal heat and higher MP's.

Non-radiant heat could also be called "scalar heat" as it is scalar energy that has become trapped inside an atom. It is undetectable except through the information property of the element's melting point.

If you examine the periodic column next to Hg, the one with B-Al-Ga-In-Tl, the theory gains in credibility. The very high MP of Boron is caused by its not having any completed solid structures and hence little scalar heat. Al has a much lower MP because it has one complete structure (the cube). But the MP drops way down to room temperature for Ga because it has two complete structures, the cube and icosahedron, with one electron left over (18 + 3 = 21). The MP of In climbs once again because it has two 18 member shells, one which remains incomplete and one which is complete was the outer shell.

Unfortunately, like all theories, there is a breakdown as the rule becomes the exception. Tl should have as low an MP as Hg but does not. It still has the fourth lowest MP for a metal after Hg, Ga, and In. It is likely that the extra electron of Tl as compared to Hg accounts for its higher MP.

The theory also is supported by the MP's of the inert gases. Many scientists, including Moon, have wondered why these elements, all of which have complete electron shells, have such low MP's. Their complete valence shells allow less scalar heat to escape, and even though they do not have any more complete solids than other elements, this fact alone accounts for their low MP's.

But the theory breaks down in the light elements (H - F). This is because these elements do not have enough electrons to make solids. I believe that another theory, which I touched on in an earlier letter, must be used in order to explain what happens with these elements. The change in MP from C to N is the most drastic in the periodic chart. It cannot be explained by the nesting solid theory of valence electrons, but it can be if one proposes an "electron pair" theory as a special case for the solid theory, a possible explanation emerges.

Electron pairs have the opposite information property from nesting solids. They release heat instead of containing it, so an element with all electrons configured into pairs (such as C) has a high MP. The next element, N, has a lone electron, which has the effect of reversing the physical condition of C and allowing scalar heat to build up inside once again, leading to a low MP. The next element, O, could have 4 electron pairs, but instead has 3 pairs plus two extra. These two extra account for its extreme degree of chemical activity in oxidation reactions. O also can form into the solid cube, a further factor which increases its scalar heat and lowers its MP. The odd electron number of F makes it similar to N with a similar MP.

The "geodesic factor" also accounts for the transition from magnetic to diamagnetic elements from Ni to Cu, Pd to Ag, and Pt to Au. The high conductivity of the noble metals is an information property that results from their having an "almost complete" icosahedron structure for their outer electrons. While the icosahedron is not complete until the second column of diamagnetic elements (Zn, Cd, Hg), the elements that are one electron short of completion (Cu, Ag, Au) are so desperate to find another electron that they shift from a bound magnetic state in Ni-Pd-Pt to an unbound diamagnetic state in Cu-Ag-Au.

Pd and Pt, however, can be either paramagnetic or diamagnetic, while Ni can only be ferromagnetic. In this case, the large number of inner shell electrons for Pd and Pt allow it to form the icosahedron of the diamagnetic state, while the small number of extra electrons for Ni make this impossible, so it must remain as incomplete and magnetic.

Based upon what has been stated here, it is possible to synthesize "supermolecules" from atoms that have higher than normal valences. If the outer 20 + 2 electrons of Sn are bonded together into an electron icosahedron (20 electrons) plus an extra electron pair. In the supermolecular state, "Sn^{-20}" is able to form supermolecules by bonding to 20 cations with a +1 valence, or 10 cations with a +2 valence, or 6 with +3 valence plus one with +2 valence, or two with a +1 valence. "Sn^{-20}" could also bond with 5 of its own Sn cations with +4 valence each. This would produce a hexagonal supermolecule with a strong covalent bond.

Eventually, this theory can be used to construct a molecular chart of the elements where high negative or "geodesic valence" is used to develop many hundreds or thousands of different materials, all completely unknown to the existing materials sciences. The exact ratio of elements for each compound can be calculated from the chart, and a stoichiometric ratio developed for the mixture that is to be synthesized into the new material. If the ratio or stoichiometry changes by a small amount, an entirely new material with different properties emerges.