

**E-Cat Rossi Focardi's book
The beginning of a new era**



Only in freedom you can have spiritual growth.

Only efficiency allows freedom and social justice.

Only in giving to everybody a decent wealth you can have a not- discriminatory real justice

A spiritual Growth is necessary, crucial and essential and it means:
You have to change from the attitude "I take all I can"
To a new way of thinking "I look at other ones needs before"
It will be tough, and we need good willing, we have to start in changing ourselves in the hope that other will follow...

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Beginning of a new era

Theory 1

I am not sure about the knowledge of reader, therefore I will try to express myself in the easiest way possible, especially at the beginning..

The Physics in an attempt to understand the rules that govern matter has created models of interpretation.

Those models are like a map in continue evolution, at the beginning you have a large scale map, then, in further models, the scale of resolution changes and deepened with more and more details. I would like to make clear that the model is NOT reality, but just an approximation.

Let's start from the easiest model that I will call Bohr's atom, developed around the '20.

In this model a hydrogen atom is described as consisting of two particles: electron and proton. Proton is described as a sphere with a mass about 1836 time bigger than an electron. The two particles have opposite electrical charge. It is stated that electron is orbiting around the proton making million revolutions per second, thus creating a virtual electric area surrounding atom. With this motion it creates a barrier made by a negative electric field that will block any particle to reach the nucleus. Of course you already knew this, but perhaps you are not aware about the proportion.

Using your imagination, you think about a hydrogen atom like a soap ball the size of a football field, well, in this case, in the center you will see a nucleus not bigger than a tennis ball; around there will be a mass 2000 times smaller, that, with his motion, will form the tiny external soap film.

First consideration: atom is mainly empty!

Second consideration: the size is delimited by the electric field

Now try to imagine a man that from outside wanted to strike the core of the soap-ball, do you think that it will aim to a big target? Not of course.

If the man will randomly shoot with a machine-gun, less then one per thousand bullets would hit the target. And if the bullet had a negative electrical charge, it would be deflected by electric fence.

But if the bullet have a positive electric charge it will be attracted from the negative barrier, and after having cross it, it will start to be braked from the barrier attraction

To hit the nucleus there is only a solution, to fire bullets without charge, and even so, it is necessary to have luck to catch nucleus. We start to understand the importance to use neutron as bullets. In fact, next discussion will be about how to create neutrons inside a substance.

Bohr models have shown inconsistencies very soon.

First concern was that a rotating electron would emitt radiation; therefore it will have lost energy and decayed. Without going into details of centrifugal and centripetal acceleration, to clarify situation, just think about an aluminum bar, crossed from electrons back and forth, it is called antenna and is used to

receive or emit energy. Now imagine the electron that makes circular orbits around the nucleus, at the end it goes back and forth from one side to the other of the diameter, and then it shall act as a transmitting antenna and decaying on the nucleus. (This discrepancy was then solved considering the wave appearance of the electron, by introducing the concept of standing wave, but this is a long story)

Second concern was given by the charge density. In fact, the same charge amount in absolute value, exist both in electron than in proton, but the two outer surfaces are very different since the masses ratio is 1 to 2000.

If we compare electric charge with Nutella, it is like to spread the same chocolate bowl in a rask or in a surface larger than a pizza. In Physics we do not like asymmetries!

(Then was discovered that proton is combine from sub particles called quark, two up-type and one down-type. Moreover right now the proton ray has not longer Physic means)

This is only and introduction, I hope is enough. I do not want to be too peculiar, but I have to make sure that we have common bases, otherwise we may have misunderstanding.

Hope you are not bored

Tehory 2

I try to describe behaves of the electron that (virtually) rotate around hydrogen nucleus.

If it was behaving like an artificial satellite, orbiting around the earth, it will have available all the possible orbits, the only condition would be to adjust the speed to the altitude: it shall rotate very quickly with a short radius and it shall decrease its rotation speed if the radius increase. The electron, however, doesn't behave like that.

At the atomic level things works in different way: **shorten is the radius, and LESS classic mechanics law's can be applied.**

This statement is quite general, as it is referred not only to electron behave, but it refer to any phenomenon at very small scale.

You need to pay close attention to things magnitude order, as what is valid in big size does not necessary works in the small.

I have to bore you with information about things magnitude things to clarify situation.

We start form proton radius that is about $1 * 10^{-15}$ meters.

We define with the world "femto" a value of $1 * 10^{-15}$ meters, we use the prefix to indicate the ratio in a million billion shares.

The proton diameter is two time the radius therefore it correspond to 2 fm (femtometers)

Hydrogen atom radius is 53.0000 fm (in Wikipedia they use a different unit with acronyms picometer pm which is 1000 times larger than the femto)

I repeat once again the concept, if the nucleus was 2 meter large, electron will turn at a distance of 53 km !!!

We consider now a diatomic molecule, composed from two hydrogen atoms H₂. The total maximum radio will be smaller than twice; for this calculation we have to use the **covalent radius** (we will go deepen on this later). Covalent radius for Hydrogen is 37.000 fm (o 37 pm) atomic radius. Multiply for 2 (as we have two atoms of Hydrogen combined, therefore the radius of a H₂ Hydrogen 74.000 fm

Now we consider a diatomic molecule composed by two Hydrogen atoms called H₂, the total radius for the molecule will be smaller than twice the atomic radius of H; for this kind of calculation we use the covalent radius (this notion will be taken up later so do not go deeper). The covalent radius for hydrogen fm is 37,000 (or 37 pm) multiply by 2 because we have two atoms of hydrogen, then 74,000 fm is the radius of a hydrogen molecule H₂.

Obviously there are atoms with larger radius, but magnitude doesn't change too much , it will not bigger than 10 times. To clarify, let's think about Nickel atoms that are interesting for us. If you look on Wikipedia you will see that nickel mass is 59 times bigger than Hydrogen, but is radius is only 135000 fm against 53.000 fm of Hydrogen, a little more than two time Hydrogen radius.

We are now familiar with Fm unit, let's go back to the electron orbital issue. As you know only specific orbits are allowed. You shall imagine an amphitheater like the Coliseum, and a ball (electron) that go down from the top, jumping down ring after ring, the ball can stop only in the flat area, while the distance from one ring to the other will be done in short time. In this representation steps have different sizes, the lower steps have higher riser, while in the higher rings, riser became smaller and smaller. In this model the ball can make leaps of one, two or three steps, but he cannot do a step and a half etc.

To understand which is the ball potential energy, when the ball is standing in a step, we shall look at the situation from a lower ring of the Coliseum. From that point of view we could say that the ball standing in a higher step has more energy than a ball that is located in a lower ring. (in Physics potential energy is defined in a different and less intuitive system but for our purposes this is enough)

What happens when the ball falls from one higher step down? the ball loses energy.

Where does the lost energy go? In the macroscopic case of Coliseum, it is transformed into heat, and the step hit by the ball became warmer. In the atom case, things work differently as there is nothing that can receive the energetic surplus, then the energy will be emitted as an electromagnetic vibration form, actually there will be a light emission that will be proportional to the energy jump.

The ball, falling one step below, doesn't suddenly stop, but gradually dampens rebounds. The Electron (ball) being an electrical charge moving up and down, becomes a transmitting antenna. In reality there is a substantial difference, while the falling ball has a damping effect in the bounce rate, the falling electron, emits always exactly the same frequency from beginning to the end.

I am trying to keep this reading down to heart, but now I have to start using formulas as it is too much important. I try to keep it easy.

The emission frequency is equal to energetic jump divided by Planck's constant (symbol h) The emission frequency is equal to the 'eliminate energy divided by Planck's constant (symbol h) $f = E / h$

As we said before, bottom steps have higher riser compared to the higher steps. We shall number steps, starting from bottom up, giving a progression 1-2-3 ... in this situation the electron that decays from level 2 to level 1 will have a higher energetic surplus than if it falls from ring 9 to 8. By increasing the dividend, (and having a constant divisor), the result will be bigger, it is obvious that a high value of E (energy) corresponds to a high frequency vibration. In fact this is what happens when the electron decays into lower orbits (1 2 3 4 .. called internal), it emits ultraviolet light which has a high frequency and high energy. When the energy jumps concern the outer orbits, we will have red light or infrared release, that will show lower energy.

When we have a single electron decays, it will emit a single specific

ray of light, called PHOTONS, it should be thought of as a segment of a finite laser beam..

One clarification, be aware that in the coliseum example, the first large step down is very closed to the arena floor, please remind that in atom reality the first ring (available for the electron) is far away from the arena floor (proton) .

Which is the reason for all those discussion that you probably already known ?

It is important to remind that we do not really see what there is inside the atom, but we presume to know it, due to the emission that we see in response to stress.

Once I was on holiday up in the mountain, with snow; me and my wife we were watching animal tracks, one day we found a book named "understand animals analyzing their excrements". It works like this with atoms, we deduce what happens depending on what is releasing. If inside the atom there will be a nuclear reaction, there shall be consequently some wave release connected. Many cold reaction lack of the connected emissions, but even heat is an emission form, just everything is out of scheme. But who says that that the scheme that we have elaborated is perfect? For example if an animal will change suddenly his diet, will he continue to do same pupu like before?.

Tehory 3

Atomic nucleus

Atom's Bohr model initially concerned only Hydrogen. In 1934 it was confirmed neutron discovery, and this allowed him to extend the model to all other atoms of the periodic table of elements.

The second atom in the periodic table is Helium that has 2 electrons and 2 protons. How can two protons stay stuck together in nucleus if they have the same electric charge? In schools physics class we do the following experiment: we place two magnets opposite each other in order to create rejection between them, then we interpose in the middle a piece of soft iron; the two magnet approach the iron and all will attract and compact. Soft iron doesn't have polarity, it is nor South or North, he is just neutral. Neutron is like soft iron, and it operates in the same way in the electric field.

Therefore neutron main function is to keep glue together protons.

Generally for each proton there shall be a neutron. So Helium has 2 proton 2 neutron, Lithium will have 3 protons and 3 neutrons....

For the firsts 50 elements the scale ratio 1 to 1 proton/neutron is fairly well respected, but then the number of neutron increases rapidly. In ninety element, said uranium, compared with 92 protons, 146 neutrons are almost twice as much! Despite the large number of neutrons, the containment is unstable and tend to break the core generating the phenomenon called **radioactivity**.

All this is well known, but in general it was not so clear how the neutron was binding protons. The solution was found introducing a new force type that is able to act remotely and it is called "**strong force**" or strong interaction. (the first one to assume it was Fermi) In Physics we call distance forces: gravity, electro-magnetic, the strong nuclear force, and another force called nuclear weak..

It is important to compare the different kind of distance forces, so to have an idea about magnitude.

The strongest force is strong nuclear force

Electric magnetic force is 100 times weaker than the strong

Weak nuclear force is 10.000 times weaker than the strong

Gravity force is hundreds of trillions of trillion of trillions of times weaker than the strong !

Let's try to see strong nuclear force. Imagine like if the surface of the neutron was spread with a tiny glue layer. When the neutron goes so close to proton to touch it with his glue, they attached themselves immediately, but until that moment the glue presence was irrelevant.

To achieve this result, it is necessary that distance forces behave to distance with different proportion. For example if electromagnetic force decreases in proportion to the square of distance, then strong nuclear force shall decrease proportionally at cube of distance, to achieve glue effect,

Let's try to imagine a neutron interposed between two protons, it is acting as a spacer in between (protons are separate from each other from the neutron diameter) and it is keeping all glue using the strong nuclear force. (we will see later that protons and neutrons are made by quarks, and we will talk about theory of force propagation at distance) .

Nucleus made from many neutrons and protons, has always a small ray, if compared to atom dimension (it never go over 10 fm).

This is because sphere volume increases with radius cube .

We have already seen the huge size of atom's volume compare nucleus.

Finally, I wish to remember that for a man shooting to nucleus inside a bubble big as a stadium (theory 1) it would make no difference if the target will be the size of a tennis ball (Hydrogen) or as large as a football (Uranium).

From next chap. we should start to get on the cold fusion issue

Theory 4

We have previously seen that laws apply, to matter behave and change according to size (smallness) of observed object.

We can identify different levels:

- 1) Macroscopic level, analyzed objects that contain a lot of matter, from galaxies down to crystals. At this level classical Physics laws are sufficient to explain phenomena
- 2) Level ranging from atom's external dimension up to bigger crystals. In this realm the agreement with classical Physics is still very good, but the first differences appear, and we are forced to slightly modify our approach.
- 3) Atomic level, ranging up to 100 fm till 300.000 fm. Here we definitely have to change view, or what we observe will not fit. I am referring for example to the electrons, we cannot longer see them as balls, but we shall see them in their wave aspect. For this reason we introduced the concept of standing wave that stays at the base of **orbital** theory. Shortly in the orbital theory electrons are described as ghost that appear and disappear here and there. An orbital is a volume in the space, where we define the probability to find the electron. The **orbital** shape change with the change of the tested electron. Most usual shape are similar to clovers, shamrocks three dimensional. Orbital theory guarantee at least 95 % accuracy.
- 4) Nuclear level, relates to nucleus dimensions. Here we have to restructured laws. Mass acquires a different meaning, the measurement unit changes from kg submultiple to eV multiple (using the well-known formula $E=mc^2$ for the mass-energy conversion) **wave aspect of matter, became predominant**
- 5) Quark level, relates to size less than 1 fm. Here you work with quantum physics and, unfortunately, geometric models are not helping. We have to rely on formulas and it is difficult to discuss about this level with the majority of people as they cannot understand.
- 6) String level. A new model of quantum physics is emerging. At this level there are phenomenon where we can transmit information from point A to point B in no time, even if the distance between A and B is very big. This fact is questioning "theory of relativity", which sets that light speed is the maximum speed limit to transfer information through the conditioned space. This is a very philosophic field. For example if you need no time to go from A to B, I can say that I am simultaneously in place A and B. But then.. but then what happened to the space between A and B. I am sure to have confused you enough, so we will resume the string subject later. I warn you that perhaps the cold fusion explanation pass for this physics level. (if you want to go deepen in this I suggest you book "il velo di Einstein" written by one of the most famous experts in the world of quantum mechanics, the Austrian Anton Zeilinger, no formulas but clear concepts)

Breathe deeply, and clear up your mind, it is normal that you feel confused, when you start to break out established schemes.

Let's go back to cold fusion : in which level is placed? Without doubt at 4 levels regarding nuclei. Therefore **we shall pay close attention to our future arguments and never forget that at this level matter aspect is made from wave NOT balls.**

Now that we have clarified this point, we can start to analyze the nuclear fusion phenomenon. Nickel nucleus is stable and has no intention to change. But in cold fusion we take for granted that nickel is changing generating a new smaller-mass nucleus, and that lost mass will transform in heat energy.

First hypothesis: applying all valuable knowledge valid for higher level, there is only one particle that can act to achieve this: **neutron**. But the energies involved are 100.000 times smaller than what we shall need to achieve it, therefore the down to earth scientist not even take in consideration this option. He has blind faith on his model, but perhaps.. he is just blind.

Second hypothesis: the phenomenon may come from lower level 5° and 6°. But knowledge of those levels is very limited, and we do not have slightest idea how this could happen. So for now we just consider this as a possibility

I knew a crazy professor, and once he said to me "Your physic science, is like somebody that is trying to figure out what's inside a cylindrical jar, well, I tell you that perhaps physic has opened the wrong lid and he has started from the bottom instead from the top. Solution is the string theory!"

Then I reply "patience, is not a big deal, if we will dig deep at the end we will always be able to achieve the opposite lit, we will only need a little bit more time...!"

Theory 5

If you want to create a neutron, you might think: I will take a proton and I will put him next to an electron at a right distance to being attract, then I wait for the electron collide and the result will be a neutron. It will not work. In fact the observer would see the electron always goes orbiting around the proton. Despite all the struggling it will not be possible to make electron stick on proton.

Why this happen?

Let's go back to our Coliseum picture. Imagine an arena thousands of km² of diameter; we put a ball in its centre representing our proton. Consider an electron in the lowest step, and assume that this electron decide to go to the proton, it should be easy! It seems all downhill! The electron has just to follows attraction force. As he approach the centre where there is his beloved proton, he realize an amazing thing, to being able to meet him, he will have to climb a mountain 100.000 times higher than the first step from where he was originally.

We know for sure that if we add proton mass to the electron the result is a lower mass compare neutron. If we think to proton as a brick and electron as a stone to keep then together we will need mortar.

Stone + brick + mortar

Proton +electron+ glue = neutron

The Mortar used as glue corresponds to 1 MeV of energy (1million electron volts)

Proximity doesn't reduce attraction between proton and electron. They just have slippery surface therefore they cannot glue together. To stick together they need mortar, but this kind of mortar is very expensive.

If proton and electron will able to attract themselves and attacked together without glue becoming neutron, matter will became very instable; as nucleus proton will once in a while transform themselves in neutron, hitting by chance some travelling electrons... It will be a transmutation chaos.

This energy barrier that prevent proton to meet electron is very important, so it is not thinkable that it can be easily removed, as this will go against natural way of things. This is one of the reasons why cold fusion is abhorred from many physicists.

There is also a safety valve, because when neutron is create he cannot last too long.

When the neutron is create he has about 15 minutes (886,9 seconds) time to find "home" where to settle down, if this doesn't happen he will decompose. It is like that mortar that glue bricks and stone together were poor. He can survive only if he can glue to protons that are stable and will not decompose. In this case Proton and neutron are stable form a stable family.

Let's consider the behaviour of neutron during his life. As he is not affected to electromagnetism, he can travel undisturbed and he has available a lot of empty space inside atoms, he can move long time without hitting nucleus. He

is not sensible to magnetic field therefore his path is not influenced. He is a free spirit ! We can stop him only with thick walls. Fermi realized that paraffin was good for that as it is rich in hydrogen. Fast neutrons (kinetic energy > 1 Mev) are thought to stop, they act like they have a very small hitting area, and therefore they are very penetrating. Slow neutrons instead have a larger impact area .

It is very difficult to study neutron, therefore it is possible that we have not yet understood all about it. To repeat experiments and control equipment required sophisticated and expensive machinery, that only few big research laboratory can afford .While it is easy to create protons, you just need to generate hydrogen ions, while is very difficult to find neutron natural sources

If we can generate neutrons inside nickel metal, the neutrons hitting nucleus may generate nickel isotopes with more neutron than regular Nickel type (63).

With neutron decays the nickel will give copper + 2Mev or do directly nuclear fission .

In next chapter we will start to develop fusion issue. Finally we are arriving there! What I have said until now is necessary to understand the following:

Do not expect solution (I would have the Nobel prize in my pocket..) I hope to give you a brighter sight, and a minimum base acknowledge. Of course you something you knew already but probably not so well organized in your mind. I hope that you are not longer scare about this subject, as you can understand the concept even without using math! Our focus was to find a "Shred of theory"!

Now we are ready to start.

Theory 6

Historical summary

In the previous message. I pointed out that from the standpoint of energy transformation of the proton into a neutron is very difficult.

Now if I continue on that road and I speak of the transformation Deuterium + Deuterium = He-4 from the energy point of view, you would find that it is even more difficult, certainly I would end up demoralized.

Is there really a cold fusion?

The answer is yes. Surely there is something that gives the same effect as cold fusion, but often missing some components of the nuclear reaction assumed.

Many will say: "We are not interested about this lack! Just give us the heat!" "Then added" We are very good, and we accept to forgive nature for these inconsistencies. "

The phenomenon has been produced in so many ways and so many varieties that those who deny it are in bad faith.

If you talk to a very competent teacher, you will often hear, "Do you think, forget this nonsense, cold fusion does not exist!" You try to argue that, but you hit a wall.

Who is right? Both. Only he is thinking to a classical nuclear reaction, that cannot exist with these energy levels, but you're right, you just interested in the phenomenon of anomalous heat production.

There is one thing where I am not in agreement at all with "high peoples" of science.

In the mid-80's came an article in the magazine "Scientific American", entitled "transmutation phenomena of low enthalpy". I remember there was a picture of a hen that was controlled with a Geiger counter by a man who exclaimed: "is not radioactive."

They have tested the hen, controlling the calcium introduced in her food in all way, including water, then they measured the calcium out, eggs, feces ... I note with amazement that they found a much higher amount of calcium than the one introduced. Eventually it was discovered that magnesium and potassium were transmuted. Given the verifiability of the phenomenon, there were no particular objections, after a few years there were several books on the market, the phenomenon extended even to plants (I remember oats) and bacteria.

We are in the presence of a transmutation of the elements in which the famous energy balance is skipped. This should put on the alert all the science, but no! What do they do? They pretend to nothing.

I recently asked a colleague recently graduated in pure chemistry at the university if they never mentioned this phenomenon, "never heard" was the reply. This denial of evidence really makes me mad!

Theory 7

Nickel-Hydrogen experiment preliminary information

Many Physicists like Piantelli, they do not talk about cold fusion but just about anomalous heat production. The main feature about cold fusion is the irregularity about quantity, quality and repeatability. The advantage is that it doesn't need big machines. I personally distinguish 4 situations :

- a) element transmutation in living beans. This is accepted, verified replicable but only partially clarified
- b) cold fusion from adsorption in a metal, that can be in liquid or gas state. It is controversial and evanescent, it has variable performances, but it has not being studied and clarified. Some seems easier to reproduce
- c) plasma cold fusion, made with strong electric shock. Transmutation is certain, not well determined heat production, easy and replicable.
- d) Sonic cold fusion. More sophisticated and seems replicable.

Due to the simplicity and availability of materials, I prefer to test cold fusion Nickel+ Hydrogen type.

There are other experimentation in this field (you can see material in the web site [energeticambiente](#) under thread "L.E.N.R. Esperimento Piantelli-Focardi-Rossi".)

In 1990 Dr. Mills and his assistants found out that it was possible to "load" nickel with Hydrogen trough electrolysis water sulphate or lithium chloride.

In 1994 was presented and tested in several conferences a little cell with small plastic balls (seems polycarbonate) coated with a tiny nickel layer.

The system was working well and it was repeatable. There had live tv coverage confirming everything. The system was promising, they were talking about production of kWh, they built a company CETI that shall have commercialized the technology. Everything was fine ! I didn't heard no more about this issue, until some years later when I read on [Energeticambiente](#) a very sad updating. Mr "Quantum leap" was referring that company "Ceti" was shocked when they found out that they were not longer able to replicate . When the company built new spheres, which although identical to the firsts, were not working. Nickel seemed different.

It Looks like there was a mischievous imp who like to breaks basket eggs.

What is worse is that this malicious goblin, like to create problem to everybody is working on free energy machine, Joe's cell, Perendev engine, Meg project etcc

So Ah! Ah! (laugh but also question mark) **Beware of malicious goblin!** He as already discredited hundreds of people, who, unaware of his presence, spent money to patent things turned out to be unrepeatable. What the heck, with them everything was working fine ! So far goblin has always won. In fact have you ever see on sales something Free Energy? (Perhaps the only equipment is the cavitation system to heat water with, but with modest return).

Now that we are aware of malicious spirit, we can venture inside the intricate path of cold fusion.

The first step that everybody agree is that is important to load as much as possible hydrogen inside nickel.

Here the characteristic of CETI experiment done with little spheres. This is the one that has produced more energy and repeatability of all (until it was working). Therefore we look carefully the characteristic of that experiment trying to establish the laws.

1) they produced millions of little sphere covered from a tiny nickel layer (we do not know the thick) . **They aimed to achieved the maximum possible adsorption surface .**

2) The heat began immediately, unlike the palladium-deuterium fusion

3) It was possible to use different electrolyte products. Although, oddly enough, they were talking always about **lithium salts** (chlorate, sulphate)

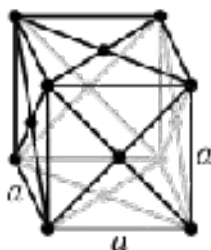
4) **a small copper amount, was increasing heat**, but too much copper was ending heat production, although production of tritium was continuing, chrome was inhibiting. (taken from page 66 book " cold fusion modern story of inquisition and alchemy " ed. Bibliopolis)

But how does hydrogen enter inside nickel ?

Theory 8

First phase of Nickel Hydrogen

Nickel has an inner crystalline like structures face-centered.



Think about a cube with a nickel atoms on each angles, with sides of about 25 pm (I remember that $25\text{pm} = 25.0000\text{ fm}$). Each 6 faces have another nickel atom in his center. Therefore there are 8 atoms (angles) + 6 atoms (face) for a total of 14 atoms. It looks like a closed box, called cubic structure face-centered; this is typical for almost all metals.

As mentioned earlier, when we consider those crystal units, classic mechanic laws are valid; this allows us to formulate hypotheses that make sense. While if you consider only "nude" nickel nucleus, without electronic cloud, the distance between each other will be abysmal. You have to remind that inside one crystal it is possible to fit more than 20 million billion protons or a slightly lower number of larger nucleus if "naked".

Space is colonized and invaded by electrons that create volume; but remember that they have a mass 2000 times smaller than protons. As they have a much smaller mass in fm, the electrons behave more likes wave than like a mass particle . (See orbital theory)

The electrons interact with each other, but they do not collide, rather they are living together peacefully; they are changing orbits instead, **there is also a fluid surface layer that is similar to a film formed by electrons that do not belong to any atom in particular**

This electronic layer is responsible for electrical conductivity, that is called **"conduction band"**.

The 14 atoms forming crystal structure give an overall neutral electrical charge. Therefore if you place a nickel crystal (neutral) next to an H_2 (neutral) you do not expect electrical attraction. Despite that, you will find attraction between the two molecules. This mutual attraction is called **affinity**.

Affinity changes depending element . For example: Palladium –Hydrogen have great affinity, Nickel –Hydrogen have a little less. Etcc..

Affinity depend from the fact that the combination of those two groups, produce a new group with a lower and more stable energetic level.

To clarify, we can say that "free" nickel has energy 40, "free" Hydrogen has energy 10, it they go together, total energy is NOT 50, but it is less, f.e. 48.

It is clear that when the two groups meet, there shall be exit of energetic surplus that in the example is equivalent to 2; therefore there will be heat production.

Unfortunately the heat generated with this system is very low, thousands of

times lower than what you get with some cold fusion.

Let's start from crystal nickel deepened in Hydrogen gas at higher or lower pressure.

There are two phases:

Phase 1: create the contact between Hydrogen molecule and nickel crystal

Phase 2 :Hydrogen penetration into crystal cube .

First Phase: It is an approaching phase. You can think to the diatomic Hydrogen molecule like a butterfly (each atom is a wing), which is attracted from the very good smell, a wonderful aroma coming from nickel's surface. Butterflies-hydrogen will pose and stick on nickel surface up to cover it completely. This effect is mainly created from affinity but it can be enhanced by pressure, temperature and hydrogen concentration.

Theory 9

Nickel Hydrogen adsorption second phase

Second phase:

How does hydrogen penetrate inside crystal cube?

How does it enter? As a diatomic molecules, as an atom or as a proton?

I was not able to find clear study on this subject so **I am forced to improvise.**

In my opinion it seems logical that it enter as an ion. If you consider the full atom it will have being 54.000 times bigger! Moreover the negative electronic cloud surrounding the atom will have faced the other negative barrier from hydrogen cloud. Same situation, even more for the two atoms of the diatomic molecule.

Therefore I think that it goes like this:

Think about that each atom hydrogen represent a man with an heavy luggage. The two men shall take a plan to go inside the nickel cube. These men cannot carry luggage so they have to leave them in deposit.

Therefore **in my opinion** Hydrogen shift from diatomic molecule to a single atom, the electron is temporary lent to the Nickel "conduction band", Is like to deposit money in bank, they are yours, but you do not have it in your pocket.

At this point, the first Hydrogen ion enter inside Nickel. During this process ion Hydrogen face an electrons river made from the "conduction band".

At first he is attracted from the "conduction band" but when he passes through the band, he is disturbed, like an air plane that pass through a perturbation.

When he surpasses the band he starts to be slowed down, as he feels behind him opposite charges. he is partially entered and then he is sucked into the cube.

It is like the experiment of the boiled naked eggs, used as a cap of a pre-heated flask . While the flask is cooling down, the egg is sucked in.

Once hydrogen ion is sucked inside the cube, he felt at home. In fact he is surrounded form negative electric charges, even if they are not his. It is difficult to think that he take back his electron; the electron will stay in the "conduction band" or it will blend with the underlying electrons, and it will find his own orbit.

I am wandering ... if you increase electrons in "conduction band" will conductivity increase ? Good question !

Perhaps there could be a relationship between adsorption and conductivity. (if anyone has information on this subject... please let me know...)

The second Hydrogen atom will follow same path, but when he will be inside he will find somebody already there. It Is not a question of space, as two balls inside Garda's lake will be closer. But from electric field point of view things are different, as there is repulsion between hydrogen ions. Each ion entered in the nickel crystal prevent entry of further one. At a certain point there will not be place for further ions.

I suppose that it will established a new dynamic equilibrium between incoming and outgoing ions.

How many hydrogen atoms can enter?

It is interesting to know loading ratio that we will call H / Ni .

$H / Ni = (\text{hydrogen atoms entered}) / (\text{nickel atoms present})$

Remember ! I'm assuming, I do not have the truth in my pocket!

Tehory 10

Protons inside the cell.

Keep in mind loading ratio :

$H / Ni = (\text{Hydrogen atoms entered}) / (\text{Nickel atoms present})$

I have to clarify something about Nickel crystal structure. In a complex structure you have to re-calculate the numbers of atoms. In fact there is a atom sharing effect that must be considered.

Each vertex atom is share from all 8 adjacent nickel cubes vertex, and each atom in the center of the face is shared with the adjacent face cube. Therefore each vertex atoms counts $1/8$, while each faces atoms counts $1/2$. Therefore for each nickel crystal structure there are 4 atoms $(8 * 1/8 + 6 * 1/2)$.

I try to explain my way.

I consider initially, a single ISOLATED nickel crystal, with an hydrogen ion; in this case the ratio is no-doubt $H / Ni = 1 / 14$

Let's think about three crystals in contact side by side with an Hydrogen ion for each cell (it will be easier to follow this doing a sketch)

We have 16 nickel atoms in the two rectangular bases of the obtained parallelepiped, then we have to add 11 nickel atoms in the center side. $16 + 11 = 27$, the crystal contain 3 Hydrogen atoms, $H/Ni = 3/27 = 1/9$

Why the ratio has decreased? This is due to the shared sides. In fact, thanks to the shared atom, if we have two cell (each one with 14 atoms) you just need 4 atoms to create a new cell, the rest are provided free of charge from neighboring cells.

Even if you haven't understand, trust me. **If we hypothetically put one hydrogen atom per cell the ratio H/Ni will be $1/4 = 0,25$.**

The ratio will be slightly different in the border cells, but even in very small crystalline group (microns) the neglect of this fact will represent an infinitesimal difference.

For the load ratio deuterium /Palladium which was well studied it is possible to easily achieve ratio 0,6-0,7. Dot Del Giudice and others found that it was necessary **to force loading till 0,85.**

Under this value is unlikely to start heat production phenomenon.

In recent years it was possible to achieved deuterium /palladium = 1

I have not information about the value that you can achieve with H / Ni

I will develop this discussion when we will treat about practical aspects.

Finally we are at the crucial point.

What happens to the hydrogen atoms within the cell?

Short answer : **it is probable that a small quantity of hydrogen ions (protons) will be transformed into neutrons (or it is as if this happens)**

Is important to note that there are plenty of electron available.

We already know that it is necessary to supply energy in MeV order to achieve that (it is not necessary to do calculation as we are very far from energy available) but from where the energy will come?

If you think that protons shaking randomly, at some point have a rebound combination that will make them able to reach the necessary energy... forget it! The energy level due to collisions are many orders of magnitude lower , says 100.000 times.

It is not even possible that external heat make electronic wall vibrate, and a lucky combination of all give the necessary energy needed for the transformation.

Very often, probability statistics are not clear. When "superenalotto" came out, somebody asked what i was thinking about . I done few calculation and I said that there will have been very few 6, there will need months to have the first 6 ! I said. My predictions turned out failure

Unbelievably there were 6 "raining", even 2 times for week. I thought I made a mistake.

But one day, came out that a tobacco shop have just sold a "6 card" few months before, had sold an other 6 card. Even an idiot will have being puzzled.

The probability for something like this to happen, needed biblical times to happen. This was too suspicious and somebody started some investigation. I heard it to the grapevine about some trick, made from who was in charge of data receiving. They were playing a white card and then they were modifying the number. I was told that there was a covered up to avoid scandal and loss of faith. In fact sometimes later all came back to normal; now in this game you need months in between 6 and another.

So do not come out with strange ideas: **Magnitude of missing energy is just too big.**

If there were not heat emission I will not lose time in something like that

Theory 11

I remind a famous phrase from "Back to the future" : "**gentlemen! You are not thinking four-dimensional**" Time is not well understood, typical time in nuclear phenomena are of the order of 10^{-21} seconds, in other words incomparably shorter than the thermal mechanisms.

Let's see things under a different perspective

Imagine a calm Lake; think about concentric wave generated by buoys which oscillate up and down in water.

This is a more realistic idea No bumps or strange movements.

The question is how can we warm up without bumping or touching? Do we know something that act this way? Yeah you guess it! Microwave oven!

Well, whatever is the mechanism that change proton in neutron shall be an electromagnetic things.

Here we can introduce Preparata's (RIP) idea about the " QED theory" (since then quantum physics made great improvement, despite his foresights Preparata was attacked indecently by CICAP).

You shall know that electromagnetic waves travel in vacuum. Perhaps you'll have heard about strange and inexplicable phenomena about things starting to burn or melt spontaneously without any explanation. Then it come out that there was a radar in the area, but the energy involved are not enough for an explanation, then we think about an unfortunate combination of waves.

However, theoretically, there could be instead a peculiar combination of waves, and at nucleus level, it may be more common than we think.

This is not enough need something more concrete that is definitely there but we do not know. How about dark matter? It is there but which features does it have? And if there was a carrier wave outside perception of our tools?

Stephen Hawking hypothesize and proves mathematically that the universe has 11 dimension. Any vibration occurring on other dimensions will not be felt here, but they could be felt in border nucleus, within the considered cell.

I have another theory.

The smallest particle that exist in matter is NOT quark, there is one smaller, that is half way between strings and quarks (strings are too complex to try to explain, just leave it)

I think (hypothesis) we are now in a time comparable when they started to glimpse the radioactivity, we are entering a new chemistry. Since we are missing measuring instruments, for the moment this knowledge is still out of reach.

Scientists are right, it is not fusion! It is something else! Just like nuclear reaction were not chemical but are intersected with it, so these reactions are not nuclear, but intersect with nuclear power

Tehory 12

Cube spitting neutrons

We are approaching the end. Of course if we use electrolysis instead of gas, the Hydrogen charge takes place much earlier.

This depend from consideration that hydrogen enters as an ion.

Electrolyte phase is required, since we need to reach an adsorption large value.

Neutron inside nickel crystal will move, and they will going to collide with nuclei of nickel or other larger atoms.

But where the reaction takes place ? Within the cube or outside ?

To answer we must ask whether it is possible to introduce inside the nickel crystal, larger atoms .

Answer is "yes of course", but they must be naked.

Deuterium will enter very easy, while Helium will enter only if we are able to turn it into ion ++

It is clear that as you go up in the elements scale, it will be increasingly difficult take out all electrons to left the atom naked.

It seems certain that **most reaction happen, out of the cube, on the surface.**

This suggest that neutrons in their movement, have preferential direction tending avoid nickel nucleus.

An explanation might be this one

Imagine a buoy sitting in the middle of a lake. We define standing wave ,a wave that can come and goes between buoy and shore without losing energy. This fact is influenced by the lake walls shapes .

If the lake is round, wave will shows concentric circles, but if there are peninsulas or other, the wave circular shape will change. As a result of this behaviour seems that the amount of vibration motion tend to stay on established straight lines. When proton due to resonance start to adsorbs energy (assumption), it is able to merge with electron and transform in neutron, and it will move on straight line influenced from the original proton momentum .

Neutron is almost not stopped from nickel atoms well lined, within the well aligned crystal structure.

It has being noted very soon that cold fusion was supported by micro-fractures, from the jagged surface. Even better if inside those fractures there are other elements, able to help easily fusion.

From the above we can identify the ideal nickel situation:

- 1) Thin foil with strong roughness or indentation
- 2) Microscopic layers of nickel spread on huge rough or with indentation surface.
- 3) Small balls with thin nickel coat, added with micro-particles partially catalytic and partially abrasive, (shacked inside a mixer to create

roughness). Perhaps the ball base is important, in fact the second kind of CETI balls might have not work for having use a support different from the firsts.

- 4) Particulate matter with roughness and jagged edges combined with other catalytic powders

Thick nickel rods are only goods for tests and adsorption controls.

Remember, electrolyte load improved in case of potential difference on the nickel edges (improvement can go till 40 /50 %)

Enough for basic theoretical part

Tehory 13

Nickel active surface

Hydrogen adsorption improve proportionally to the increase of nickel hydrogen contact surface size. I will call it "ACTIVE AREA".

To have an idea on this adsorption relationship with nickel powder size, I made a little spreadsheet program that I hope is correct enough.

Program is calculating "active area" at variation of grain size.

Grain is supposed a cubic shape, you must enter the value of the edges in nanometers nm . Basic reference is Nickel Raney (average value 100 m^{-2} per gram).

Let's have some value:

Particle with 100 nm diameter (edge) give an active area = 60 m^2

Particle with 1000 nm diameter give an active area = 1 m^2

Particle with 10.000 nm diameter give an active area = $0, \dots \text{ m}^2$

Tehory 14

Oxidation importance

I tried to experiment a very fine powder (about one micron diameter) and i noticed that it seemed darker, the magnetic proprieties were significantly decreased, in fact with a neodymium magnet you could early draw it. Evidently standing unused for 20 days it was significantly oxidized.

It was very difficult to use it as a cathode, it has dispersed in water immediately, blackened water. I waited that it sink to the bottom where there was a nickel wire, with negative voltage, then I placed over a glass disc with some weight (in glass) to keep powder compressed so to improve electrical contact and all the dust acted as a cathode . I added a solution of water distilled and baking, and over I put an anode made with a nickel wire .

I put a camera to check tube, temperature voltage and current .

After 24 hours I didn't notice anything, temperature remained essentially constant, not like what happened with previous experiment (message 106)

I tried to increase current and voltage but nothing changed.

This made me think more about nickel oxidation.

Theoretically, you thinks that nickel is not oxidant easily, for this reason it has being used for coins, but on close inspection, it oxidized and a lot ! It just does it at the surface level. Oxide forms a protection layer that protect it from further attacks.

When we increase nickel surface, proportionally nickel atoms oxide increases.

I remember that surface exposed for a compact cube measuring 1 cm^3 of nickel is 6 cm^2 of $6 * 10^{14}\text{ nm}^2$

If we reduce it to 1 micron grain, we have 6 m^2 that correspond to $6*10^{18}\text{ nm}^2$. then the exposed surface has increased by 10.000 times but even oxidation is increased , and individual grains are actually wrapped in a tiny layer of oxide that prevents ion Hydrogen entering.

Finally, remember that if we reduce a cubic centimeter of nickel in grains with a diameter of 2 nm, surface exposed achieve 3000 m^2 that correspond to $3*10^{21}\text{ nm}^2$

In my first experiment I used **freshly ground** coarse nickel, obviously I had not let time to act oxidation invading all the particles, and this is why the result was positive.

In my opinion the nickel oxidation problem is the major hurdle .

How to solve it?

- 1) You can grind nickel in a vacuum, but it is not easy, and at the first air contact it will oxidize
- 2) You could grind nickel, mixing it with a reducing agent (remember "reducing" is a product that tends to capture oxygen). It is necessary however that this product is capturing oxygen better than Nickel...
- 3) You could grind nickel normally, then pass the powder in oven at high temperature in hydrogen atmosphere, but then the problem would be to remove from the oven without oxides.

It seems that the only practical solution is nr. 2. The reducing agents easily available are hydrides, thiosulphate, oxalic acid. But also metallic powder such as iron not oxidized.

It seems to me that it is easier to buy powdered oxalic acid, it is used in bee-keeping.

I'll try to grind nickel mixed oxalic acid.

But maybe you can just use nickel and sugar, maybe with a little metallic iron and/or aluminum.

Another possibility is perhaps to use liquid glycol (radiator fluid for car)

I went to look at what Rossi and Focardi have done to avoid oxidation and discovered that the Raney Nickel Nano powder is mixed with sodium hydride NaH which is one of the most powerful reducing agents.

Sodium (Na) is positive (male), but hydrogen is positive (male), how did you put two male together ? Simple sodium hydrogen is much more masculine and when you combine to hydrogen it plays female role (just as in gay couple). When there is the presence of oxygen (female) and the sodium hydrogen are attracted to I and try to catch it and that is why sodium hydride is strongly reducing

This confirm the assumption that the control of nickel oxidation is of a great importance for the phenomenon

Tehory 15

Meet the "similneutrone"

It is astonishing to see a scientist well known as Sergio Focardi that has the guts to say openly that FF is a reality, and it is incredible to hear that is more than one year that they are producing electricity and that they have built big machinery to deal with that.

At this point has not means to reproduce it, there is nothing long to discover or verify. If you'll do it is only for fun. That's what I am doing. In fact once you have nickel it is very cheap doing some experiments. The one I'm doing are all negative except the first.

For curiosity I clarify that in the NOT successful experiment, the remaining micronized nickel has unified in a grayish spongy structure.

I fully understand why they used gas phase. As the experiments going on without hurry, I would like to take the chance to go on with little theory.

I am doing this by following a dream that I have had after my first experiences (Ah ! Ah! Will say somebody, there you are, where he is getting his ideas, in a dream! And my reputation goes to minimum, but this is the truth, I do not see the reason to lie just to save my reputation)

In my "strange" dream I saw an ancient Egyptian papyrus, and someone was showing me a picture where there were two little circles with a "+" sign and in the middle there was another little circle with "-" sign, and he was saying that the solution was there.

I thought for few days, it seemed obvious that he was referring to two protons with in the middle a negative charge.

In my spare time I do as volunteer (I am professor retired) some hours of physics experiment on each class of eight degree, this year I have 18 class in 4 schools, I always like to show the following experiment. I take two strong magnets in repulsion and I insert in the middle soft iron. This one is able to keep tie the two magnets. Then I am saying them that neutron is acting in the same way

Now imagine two proton with two electrons interposed, we would have a neutral group, that is imitating two neutrons, I will call the **group similneutrone**. You will tell me that charges are neutral overall, but they are distributed very differently than the neutron. We have here a bipolar situation, while in neutron there is not (in fact even in neutron charge is not homogenous) however imagine the similneutrone group rapidly rotating, it is like having 2 neutron in motion. The similneutrone group can move freely, and it is less subject to electric field generated by the electron clouds surrounding the atomic nucleus .In this way, probability for similneutrone group to reaches nucleus grow significantly..

Once they get in contact with nucleus, quark strong nuclear forces became involved. At this point you can evaluate what is happening, doing an energetic balance , for example if we have a nickel 58 (28 protons with 30 neutrons) that receive a "**similneutrone**" group, it is possible that all will transform in nickel isotope, with energy emission equal to the happened mass defect. In this case we would not have emission of neutrons.

Ni^{58} Massa = 57,93535 i add the mass of two protons and two electrons)
 $57,93535 + 1,007276 + 1,007276 + 0,000549 + 0,000549 = \mathbf{59,951}$

Ni^{60} massa = 59,93078

i see that $59,93078 - \mathbf{59,951} = -0,02021$ mass excess that is released as energy .

Obviously there will be many other conditions, but the principle could be just that. At this point I checked in internet if there was something inherent to this theory. To my surprise I found an article in the Rossi Focardi site (journal of nuclear physic). Dufour speaks explicitly of virtual neutron, but in a technical way, very difficult to understand.

However there is an article from Professor Ch. Streemenson that is very clear (se attached" Explanation of similneutrone Stremmenos") if you have followed the theory that I just outlined you shall be able to understand quite well. To better clarify, I will describe here following how similneutrone is forming.

There are two places where the similneutrone can form:

Case a in the cell intercepting vagabond electrons inside

Case b on the cell periphery with a inner proton and an external proton

Here enclosed a photo with a two dimensional cell with 4 nickel atoms , yellow line is indicating the area where there are free electron, in the common area called the "conduction band"



Tehory 16

I am always amazed from blind faith that many people have towards medicine, religion and physics, but what is really surprising is that fanatics are the one that knows less.

Physics is definitely the most accurate of the three mentioned sciences, but physics in particular, is far away to have found all the answer.

This speech looks strange , coming from somebody that is a strong supporter. Where is the contradiction ?

When I attended the first year of Physic University in Padua, I had to do an exercise that applied the so called "theory of minimum squares" . I had to take some measurement. It was necessary to obtain the function representing the trend of the phenomenon. We had to create a function consisting in the sum of terms calculated using derivatives... Eventually we were obtaining a function whose graphs represented the trend of phenomenon in question

Did we understood phenomenon?

No! we just figured out how to develop a mathematical function that described it. Of course one could predict the behavior obtained using the function, but this didn't mean that we were understanding its essence.

All the boundary physics has this feature, in other words we describe the performance with great precision but is not said that we know the essence.

When we enters the world "very small", nobody has ever seen what happen over there, but it is deduced trough experience elaboration.

"Bohr" atom , made with nucleus and electron rotating around it, staying on quantized orbits, is working well to describe chemical phenomenon or electric conductivity, but when you do an experiment where you have to send the atom trough a small hole large the size of the diameter, Bohr model collapses.

Matter tend to behave as a wave

From this situation it comes the need to create a new branch for physics called "wave mechanics" , trough wave mechanics we are able to describe and predict many behaviors wave. At this point however we find new and unexpected surprises. In fact , if we fire a single neutron, through two close slits, we may or may not have, interferences phenomena, depending on whether or not we close one of the two holes (nowadays we are able to do this phenomenon with big masses made of tens atoms, like fullerene that has 60 carbon atoms). From this and other experiments, it comes evident the needs to overcome Wave mechanics, for a new way to interpret the phenomena that occur in Nano scale dimension through the quantum mechanics.

QM takes into consideration the fact that energy status have many finite values, hence the name, when energy exchanges takes place there is discontinuity when it passes from one state to the other. In my opinion the main aspect of QM is the concept of **probability**.

Quantum mechanics is the new frontier, it doesn't pretend to understand the phenomena but it just give the probability of a certain event.

Are you not believing in the existence of **colored** Quark forming protons an neutrons ?

At the best we can say that it is like if they were existing colored quark, theory is working, as it allow to foreseen phenomenon with a higher precision than previous theory. That's all.

This theory has been developed , on observation made till now (limitate..!) For instance we do not know too much on what happens to a proton enclosed within the intense electric field existing in a cubic crystal cell. Even when using most powerful means we can assume atom, it is not still, but excited , because only at the absolute zero it is really at rest, quietness, however, implies a certain amount of kinetic energy at the bottom.

Not to mentions elements transmutation phenomena that occur in animal and plants (validated from reputable laboratories, despite skeptic continue to ignore the fact) In university that I know, the argument is not event taken in consideration .

Let's go back to our experiment with a visual model more valid than the one with solid balls. Personally I love visual way, for this reason QM, that is almost all pure abstract mathematics, is not so sympathetic for me.

Let's think to a two dimension section of a nickel atoms cubic cell; let's try to visualize it with a little bit of fantasy but near to QF.

Let's think to a square lake 10 Km x 10 Km (or bigger) At the four corner there are 4 nickel atoms that looks like a soccer ball(nickel atom is much smaller respect lake dimension) . lake is surround from a space alteration 5 km large on each corner, due to electron presence.

I will define as "field" an empty space element in which the essential characteristics are altered by the presence of a strong attractive and repulsive sources of various kinds. In our example the field is the water of our imaginary lake. I always found it amazing how easily we accept the current physical idea that the vacuum can be changed; How it is possible that **nothing** can be modify is a mystery for me ! (I remember that ether theory is still not accepted nowadays).

We assume that the **useful range** of a negative electric field generated from electrons shall be 5 km (actually is infinite)

According latest theories, it is like any particle, which normally behave like a wave, in the moment where we interact to track her position, or simply her presence, she will pass from wave status to something that has solidity characteristics; we will call this thing : particle.

Now imagine that we can scale it up and that we can see nickel atom nucleus, well even there it works in the same way, waves alter space. If you magnify it again to enter into the proton or neutron, we will have to deal with new strange particles called Quark's, but here the alteration of empty space will be so different to the one in electric field, as here we deal with "strong" force.

Personally I consider possible the existence of sub- particles that form Quark and these sub-particle that I called "**Orgon**" (they can be two kind : Yin and Yang) The would be thousands of times smaller than Quark and of course there would exist essentially likes wave.

So our lake is teeming with waves/ particles disappearing and reappearing wandering here and there.

QF is able to predict statistically where we have the highest chance to detect the various particles.

Let's think to a proton in the lake, visualize it as a mark smaller than a soccer ball , now imagine that it appear and disappear at a certain place in the lake. For several time it appear and disappear at a certain point, then it disappear and reappear in different places far away, perhaps bypassing energy barrier (tunnel effect) If the probability of finding it in a certain area exceed 95% we

can say that this is a stable energy state .

If it was not clear enough, I propose you the following paragon:

Think that you have to analyze city traffic, of course you cannot foreseen where it will be a specific car, but you can tell very nearly the average number of cars that pass through a traffic lights, even If you cannot specify which one certainly will.

Tehory 17

Clarification

I summarize main concepts which i tried to highlight in previous message.

- 1) Physics seeks to understand reality , but most of the time it must settle with a description that became increasingly worked so to match theory with practice.
- 2) Mathematical formulation is necessary to foreseen phenomena and work with them, but at the beginning, to understand, it is better to use simple models like parables. **Parables are at midway between transmitter and receiver.**
- 3) Unfortunately, if a neophyte continue to use of model he get the idea that it correspond to reality. This is why is said "**there are not colored Quark**", therefore no colored ball, but eventually waves, or wave packet with peculiar characteristics.
- 4) Wave model is closer to reality, and this needs a different mental visualization. Our crystalline nickel cell doesn't have walls (should not be viewed as an hermetical box) but it has "fields" that are creating barriers. It looks like a useless factor, but if you visualize a wall you tend to think that it is a impenetrable barrier; if you think about a force transparent barrier, it will be more acceptable the idea that particle/wave will be not so entirely confined inside the cell (see tunnel effect).

I tried here to give a different view model in an attempt to create in the reader a better thought flexibility .

An atom may be similar to a pulsing sphere, made of nothing, in which there are only oscillating fields, and with many waves as there are particles that make up the atom. It is like if **there will be a single carrier wave resulting** , that is modulated in frequency, amplitude, timbre (wave shape)... To describe such kind of carrier wave there is a mathematical formulation consisting of a terms summary.

The carrier wave idea is real or a mathematical representation of an idea?

The experiments in which we send particles through two narrow slits, seems to confirm the idea of one single wave that represent the entire global system.

Let's think to have an emitting source at left side, and a receiving screen at right side, in the middle we put a sheet to prevent the bullet fired by the source to pass. The sheet has two small close slots. The slots will be the same diameter size like the bullets fired from the source.

- a) In 1805 English physician Thomas Young demonstrated that light passing through two slits, is divided into two parts. The two slots become two distinct monochromatic light sources (monochromatic= identical frequency). Well in the right receiving screen, we will have a series of light stripes (light bands) or dark (dark bands), the two waves generate by slits interfere. The image we see is called "interference pattern". Young pointed out that if you shut down one slit, the phenomena was disappearing. At that time it was generically thought that light was create by tiny balls, therefore the experiment was a sensation.
- b) Let's modify the experiment in a way the source shoot electron, rather than photons, and it is shooting one electron at a time. Well we stil observed the interference pattern. For what we know electron is made from a single indivisible particle, so how do you divide it into two parts which interfere? I remind you that the interference cannot occur with a single wave Obviously we must be careful in sending only one electron at a time (we are able to do it, we are even able to send one single photon at a time)
- c) If you shoot an electron instead of a single proton (or neutron) at a time, we get the same phenomenon of interference to the astonishment of the first researchers (at the beginning of 1900). We now know that protons and neutrons are made of sub apparently distinct particles, called quark. Therefore in order to realize the phenomenon of interference or we think that single quark wave are merging in a single quark wave and this wave will be then splits into two waves that interfere, or suppose that there are many different waves and each one is interfering on his own. I conclude by saying that analysis of interference pattern is very important for researchers and is related to the slits lenght
- d) If we shoot a big mass (in atomic dimension, for example an atom with big mass) or if we shoot molecules built with several atoms ,Does it happen the same? Answer is yes. I quote the book "il velo di Einstein" by Anton Zeiligher (Vienna's Physician , considered one of world expert in this field, winner of Descartes 2004) I recommend it for its simplicity and clarity, In this book page. 19 it describes the same experiment done by firing individual fullerene molecules (group containing 60 carbon atoms in the shape of soccer ball). Here we have a global wave that contains a large number of other waves, given by the large number of particles contained in the fullerene molecule.

Later I will tell more about new experiments in this field. Results are amazing, and they are questioning everything that we know till the same space concept.

Perception stands between us and reality

The perception is characterized by many factors, the most important are:

- an external input from senses,
- Data processing, produced by the brain using personal logic
- emotional state that lives in us, that "color" our perception

If you want to advance in knowledge, you have to operate in those two last

point . The introduction of new models made us able to have a new wave to re-elaborate and therefore to perceive

.

We must be aware of the emotions as they count a lot , if we are angry nothing work fine, if we are in love we are blind and pheraps.. we will marry

Tehory 18

At the moment, in my opinion the only "theory" that could help understand the phenomenon, is the one just explained, defined "theory of similneutrone"

It is based on following assumptions:

- 1) There is a "fusion Rossi-Focardi"
- 2) Most of the available data are reliable
- 3) The mechanism that produce the phenomenon is beyond present acknowledge
- 4) My "dream" produced from my unconscious, is driving me in the right direction, confident from the fact that at least another theatrical achieved same conclusion

I have attached Prof. Ch Stremmenos file, and I will quote some speeches :

"..based on behavior of electric charge in vacuum, where opposite sign attract each other and melt to form a single neutral body (no electric charge), except cases where this does not occur for ex. in Hydrogen atom where opposite charge (electron and proton) despite attraction, they are not melting, for reason that we cannot develop here. While electric charges of the same sign repel each other, and repulsion force tend to became infinite when the approach distance tend to zero. Therefore classic physic therefore foreseen the impossibility for fusion of two nuclei's with the same electric sign (homopolar)"

He goes on...

QM (quantum mechanics) instead, leaves a little chance, that in a huge numbers of homopolar particle couples (f.ex. widespread hydrogen nuclei (protons) and nickel nuclei placed in a crystal lattice), in some of those couple nucleus which have same electric charge sign, can approach the distance ($\approx 10^{-14}$ m), dominated by nuclear forces, very intense but short-range action that tie two nucleus making a new one with stability characteristic or less" .

Those consideration are valid only at atomic microcosm they originate from the Quantum model Study of a particle enclosed in a box with impenetrable walls. In Classic physic nobody expect to find particle outside the box, but in QM it is possible with some non-zero probability..! This probability will result in an effect called "tunnel effect", that applies to systems consisting of many micro-particles, and it foreseen that a percentage of these could be found out of the box, having penetrate (through a tunnel) wall/barrier generally impassable. In our case the barrier can be the electrostatic repulsive barrier of homopolar pair of nuclei called Coulomb barrier.

...as for all transitional metal in solid states, nucleus nickel atoms are located at the angles and in the center of the six face of a microscopic cube, leaving an octahedral free inner space. Since nuclei have very small dimensions compared to the atoms volume, the internal space would be populated by free electrons of atoms inner shells of the face centered cubic structure, but also from electron that create the "delocalized" conductivity cloud. .."

When I read it I was surprised because his considerations are very similar to what I presented, so it looks like I copied. I have not copied, rather than, I will say that this is perhaps the only logical path possible.. I like the simple and effective language used, without much mathematics, typical of who have something to say and want to be understood. But let's go on (pic. 1 shows an idea of what shall happen)

...if we admitt that the overcoming of repulsive Coulomb barrier (tunnel effect) between two nuclei, is conditioned from the screening electrons action, also said, from the specified density value of the electronic cloud in which proton is located (which partially neutralize its charge electropositive to make it almost a neutron)

...to have a theoretical basis of the partial proton neutralization, in my opinion, you have to think about Quark theory, evaluating the degree of partial proton neutralization in interactive terms of lepton with baryon

.. now in my opinion the space which this can happen shall be two:

- 1) The one in the surface
- 2) The lattice one from metal mass

these spaces should work in different way respect the mechanism of overcoming repulsive Coulomb barrier (tunnel effect) and fusion of two nuclei, because the specific density of shielding electrons is different in each case.

In Physic "to understand" often means being able to "foreseen", therefore let see if we can foresee something.

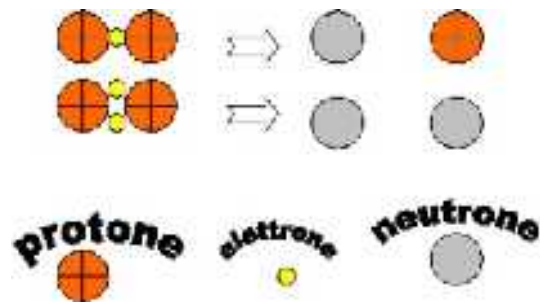
In the attempt to undermine the blind faith on the known physic I will tell you a story

Some years ago, I went visited with a school, in Geneve where they were building the new accelerator. During lunch break, I was at the bar with an important person, and I started to ask him questions. He was explaining me, problems that they have had in positioning big permanent magnets. They had to proceed very slowly in the approaching: a shock would have create parasite current that could have compromised the precious magnet. I brought the argument of Rubia Thorium fusion (there is a reference in thread "fission research data" message 6)

He said to me that one thing was the computer simulation and another history was the practice

"how It happen?" you have the best programs worldwide!" he reply "quantum is based on probability and not certainty, you believe too much in theory, everything has its limit.

Then he explained that that practice test shown that to have chain reaction, you shall have add so much radioactive material to reach dangerous critical mass.. Therefore you will have missed the main advantage that was to have control of the turn of the reaction. Moreover even the radioactive waste was increasing. Therefore nothing is certain.



Tehory 19

Waiting for further confirmation

Information on Rossi Focardi cold fusion come in drops, so there are a lot of discussions. Some arguments are reasonable.

For example message 125 on "Truth or hoax" note:

- 1) in science you have to give all your information to replicate your experiment
- 2) in industrial operation, you keep shut up until you are ready to sell in the market with a working product.

The two statements are realistic and reasonable.

In scientific field things are never so sure, it depend from case to case.

First statement Is true for sure if you have a discovery without a practical application, you state a theory and you hope to win a reward a position.

The second statement is definitely realized in everyday life because in industrial field, there is the smartest law. "shut up, the enemy is listening!"

A typical example was the discovery of coherent laser light attributed to Theodor Maiman in 1960 (he didn't win the Nobel because more than an invention from blue, it was an assemblage of various discoveries) . I remember reading that someone once said, " well the discovery is done , now let see if we can make some application"

At that time no one could imagine the incredible application that will have come later.

A few years later there was a war, for the applications patent.

In case where immediately after discover, you can see the gain possibility, statement nr. 1 is not so true.

If you read the Piantelli's articles on CF on paper "Nuovo Cimento" you will see that there was a misleading information. In fact Piantelli speaks about a bar of "deuterated" Nickel. What did he mean? When some time later Piantelli realized that the phenomenon was not repeatable even from him when he was using another nickel, he gave, privately the correct information.

He said :

"there was NOT deuteration in the bar, I was always using only Hydrogen". It seems indisputable that we are here in a situation where the practical application is absolutely overwhelmingly compare theoretical aspect.

Actually I would say that there is NOT theoretical aspect, if you exclude the Prof. Preparata's discussion, that anyway is not accepted by official science.

So we only have an experiment with heat.

It remains to determine whether or not there was this excess heat.

In this forum discussion start to look like a yellow. Who is the murderess?

The villain seems to be Rossi, and looks like everybody (except myself) knows everything about him, he was already processed and judged as a crook, a smart ass.

There is no trial or defensive counsel, only negative judgments based on circumstantial evidence without the rigor necessary in those cases.

Then there is Focardi and here at least we have his declaration.

Nobody so far has accused him to be involved in a fraud, but if we admit that the whole thing is a hoax, we have to assume that the poor Focardi has being duped by evil Rossi; otherwise how can he had said what he said ?

Another hypothesis is that the two scientists are in league and try to scam the unwary industrials to get profit.

But Focardi is an estimated retired professor, he has a good pension and a good name: Is it possible that he invented a bogus story ?

Perhaps the solution of this yellow is elsewhere

Do you know which kind of interest there are behind the FF project?

When Fleishman made the statement on cold fusion, work prospects for thousands of employed researchers went immediately burn.

On that occasion the Padova research center were desperate because many loans on hot fusion and fission were blocked

What do oil companies, manufacturers of nuclear power plants etc think ?

You wonder why Focardi and Rossi are mysterious?

Most probably heat production is there but it is floating, it give mixed results, because it is about more than 10 different parameters. So they are trying to understand more, before some "Chinese guy" understand how to do it and start to produce despite not having the patent.

No Nobel prize in sight.. no theory but only production possibilities. Of course if It works it would lead to an industrial revolution has never seen before

Theory 20

Hypotheses on the mechanisms of "virtual neutrons" formation

The following are only hypothesis.

Of course I am stating this because we are NOT in a scientific review.

Please accept certain hypothesis without proper demonstration. He have hypothesized earlier that repulsive force of two protons were neutralized by the interposition of negative electric charge.

We have also hypothesized (using a lot of imagination) that if you can approach two protons at a very small distance, then they are affected by strong nuclear force. This huge force presses the electrons (1-2 or more) that are squeezed within protons as in a vise.

Now with stratospheric imagination we suppose that or electrons will melt with protons generating one or two neutrons, or, that the group, made from neutron that push two squeezed electron, made a new strange particle that I will call "**similneutrone group**" (this is the idea that I think more probable, because if there will have been formation of two new neutron in a well define position, it will arise problem with the principle of indetermination, so the average life time of new born neutron will be o short not to allow them to move and to react with other atom nucleus)

Somebody can say that in nature there is a hydrogen molecule with two protons and two electrons, and it doesn't do anything of what I am saying. There will need temperature and pressure like in stars to obtain neutron. I know but dreaming is inexpensive.

Let's imagine having a set of atom arrange on a mono-atomic plane, for simplicity try we will consider nickel atoms side by side.

Fig.1



The picture is showing wheels that represent nickel atoms, the black outer circle correspond to the electronic cloud, the red ball correspond to protons.

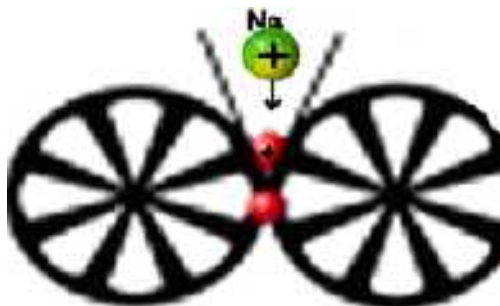
When Hydrogen is close to nickel surface, configuration of nickel electric field work to pull away electron from hydrogen proton. Hydrogen became a positive ion, and it's attracted from nickel surface. The distance between the two protons is proportional to the corner. In the figure if the angle "A" is very acute the two protons could be very close, if it is an obtuse angle the proton could stay apart. The description is used to understand but it could be easily that the angle between two protons is obtuse.

Fact is that angel is an important parameter to be consider

There will be an ideal angle that will realize closest approach.

Let's ask ourselves what is determining angle magnitude. In my opinion the amplitude depends from nature of atom itself, and from temperature. Temperature is a variable parameter, when it increases, atoms will expand as electron will pass to more external orbit, moreover atom is vibrating, and therefore even the angle varies. There will be also an **ideal temperature that will achieve maximum performance**

Fig.2



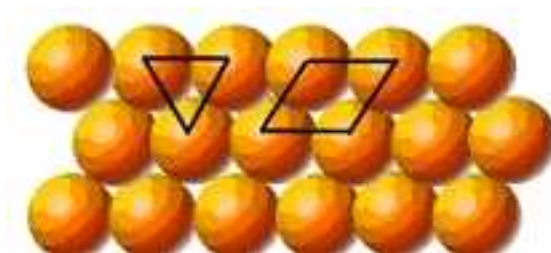
Another factor may be the presence of ions atoms that push the proton, fig 2

In fact there are rumors about presence of sodium hydride, but it can be also that the presence of other atom help phenomenon.

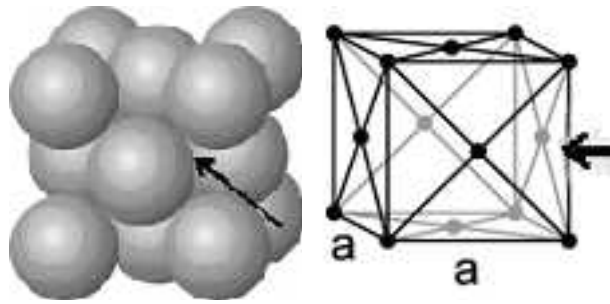
So here we have another parameter, the presence of a certain percentage of sodium and /or other elements.

Until now we have think in a one-dimension situation, but the dimension are three

Fig.tre



Here we are entering the crystallography field ; we recognize the symmetric geometric structure, for our purpose is not necessary to go into detail, is enough to say that if it is viewed from a particular direction nickel has a face-centered cubic cell



Penetration angles are now three-dimensional, they are called "solid angles" . Apart from this, the considerations made in two dimension are still valid.

We define a single crystal lattice (made in this case from 14 nickel atoms positioned in a face-centered cubic shape) a "**unit cell**" . If we add to it other nickel atoms they will have to add another "unit cell" and we have already seen that 9 atoms are enough to alongside another cell, because it will share one wall of the original unit cell

If we continue to add atoms to the original cell, that will built new cell around the original, we will have a "**crystal structure**" . As a guide we can imagine that a little crystal can be formed by thousands of elementary cells.

From the picture we can identify 12 "solid angle" through which the different hydrogen proton can enter the unit cell.

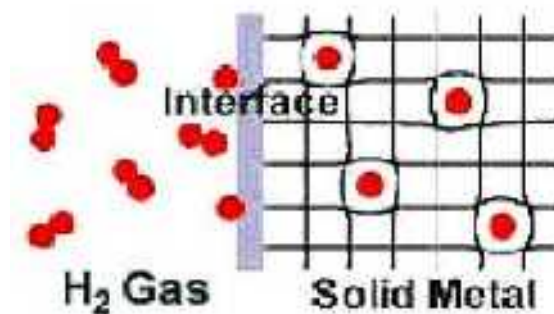
Tehory 21

Strange situation in penetration and distribution of hydrogen in nickel

Suppose we have a typical nickel nano-crystal with an edge of 2.7 nm (nanometer) it will consist of about 1000 elementary cells of nickel (each cube 10 cells * 10 cells * 10 cells)

Nickel atoms that makes our nano-crystal are about 4000 as explained in theory 10

Fig.1



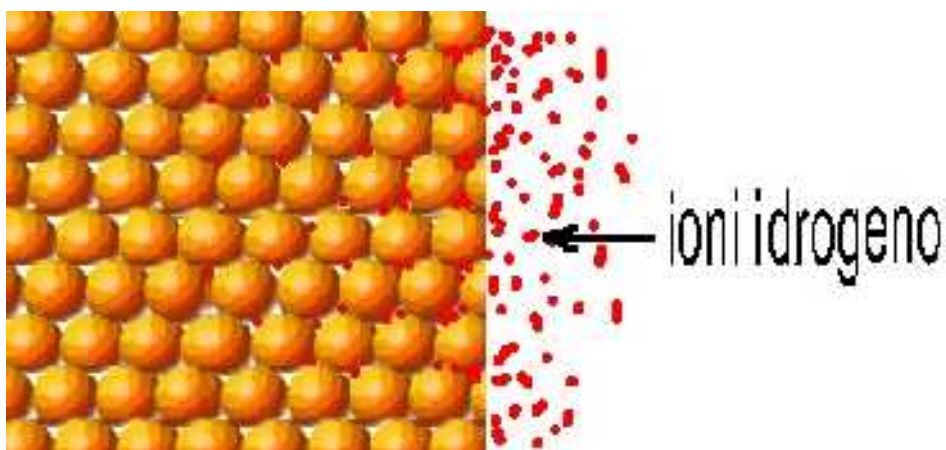
As already mention penetration of gas in solids is known as adsorption .

Penetration occurs initially in the surface of nano-crystal, in other world in the outer faces.

It is observed that the points of penetration are reduced, if a unit cell ha 12 point of penetration, when the same cell is part of the crystal structure described above, it has only 1 to 4 point of penetration depending on how you consider.

The superficial face, being exposed, received very easily ions from gas, where there are plenty. If the face is internal penetration will be tougher. This is evident if you look at the empty cell, the ions must receive from an adjacent cell where there are few hydrogen ions, which by the way they do not have many opportunities to go out of the cell from where they are confined.

Fig.2



A strange phenomenon that occurs in adsorption is the **Not-Homogeneity**. I clarify, if we add salt to water this will be distributed uniformly, there will not be one area very salty and other unsalted. We would expect similar behavior here, but it has been observed experimentally that, photographing with special technique adsorption of hydrogen in palladium there is a patchy distribution. As you may see in a photo taken from internet.

Fig.3

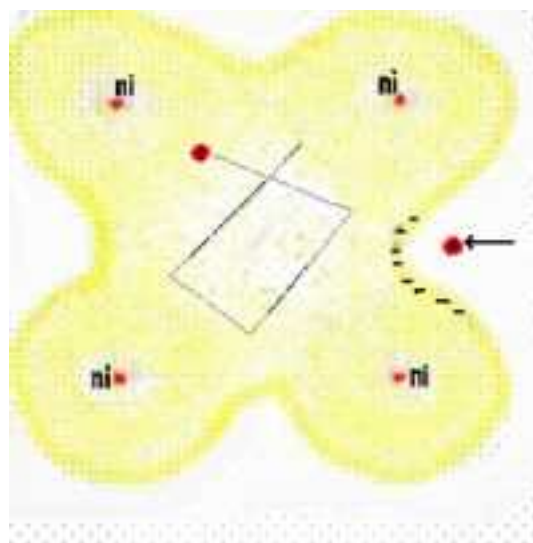


The yellow color represents the cell containing hydrogen ions. We see that in a single cell there are not very much. I remind you that palladium can adsorb hydrogen up to 900 times its volume. Strangely however other cells are empty.

Why it happens? There could be several explanations.

Hydrogen ion, (proton), to be able to enter in the elementary cell, shall have a certain speed, because if it is true that in a first time it is attracted from the nickel electronic cloud, and it can start from zero, it is also true that as soon as it will pass the electronic barrier, it is called back from the attraction of it. To escape from the retrograde attraction he must have a certain escape velocity. Like a rocket that must exit from earth attraction.

Fig.4



We can reasonably assume that hydrogen proton, once inside the cell, maintains its speed and bounces here and there, remaining confined in the

cell. Obviously it can happen that it can exit transmigrating into another cell, because after all there are 12 possible output gates.

Suppose that it rebounds remaining confined in the cell; if we were in the classical physics realm, after a while it will have stopped losing energy due to friction. In this dimension we apply laws of quantum mechanics, and there is NOT friction. Technically, in QM it is considered in a state of "standing wave". higher is velocity (kinetic energy) and more the impact of ions tend to increase cell size where it is confined. The cell enlargement ends up in **widening access** facilitating entry of new protons.

Consequently, if the bump opens wide cell, there is a work and in this case proton will lose energy in quantized proportion way.

In conclusion: Hydrogen protons, once "deflowered" a cell tends to enter in big quantities.

The blank cells are more likely to remain chaste.

An explanation a little "different" came from an alchemical saying "**like attracts like**"

Sooner or later I'll talk about alchemy, this acknowledge is not the antechamber of chemistry as usually believed, but much more.

The three first basic principles of alchemy:

1° Universe is mental. Universe does not exist in itself, but it is the result of perception. Consequently the mechanism that lead to perception affects the perceived. It is like the monitor of a computer, the image showed, depends from mechanism that turn on pixel and from interpretation of the viewer.

2° All existing vibrate (when examined from initial point of view) We are coming to same conclusion in physics, see the string theory (see YouTube "string theory-The elegant Universe")

3° Similar attracts similar. Similar vibration tends to group together to have a whole resonance.

I am stopping here, and I want to point out what is happening in granite. When magma comes out as lava, it can happen that it fills an entire valley, in this case the cooling will be slow, and it will take thousands of years. The various elements will be able to aggregate into larger and larger macro-crystals made from molecules of the same type shape and color; in this material you can see the principle similar attracts similar. The granite is, in effect, a rock that shows crystals of the same color plus or minus larger. Larger are the crystals, and slower was the cooling.

We pass now from the particle system to the wave system. Let's imagine a cell consisting of a carrier wave that contains all particle vibration (like an orchestral sound) the vibration of the entering Hydrogen proton shall be like the flute sound that will try to find an agreement with the corresponding vibration in the orchestra. If in the orchestra there will be the sound of a similar flute, he will join easily, actually it will be almost attract.

In conclusion, we will find the case of nickel cells or "virgin" without hydrogen ion inside, or with many hydrogen inside cells.

It is clear that if we could find a way to get at least one proton in each cell of

nickel hydrogen, we would have a material highly receptive to the next hydrogen proton entry .

At the contrary then men's life, "virgin" (cells) are not welcomed

Ideal starting condition, looks like to have a nickel that as at least a hydrogen proton in each cell

Appendix

I open a private chat

There has being different opinion on my statement that biological transmutation is 100% sure, I had no intention to treat this argument as it will give the reason for somebody to start dispute and jocks.

I hope that who will read this file will be open mind.

I can sentence for many personal experience, with different groups of people that **"mind is able to act and to condition matter in incredible way"**.

If somebody is interest and wish to have clarification, feel free to send me private message on this issue.

I refuse public contacts, that lead only to useless discussions, where usually the counterpart has zero acknowledge in the matter, despite this the inexperienced one , believe to have clear opinion and open mind.

I give you here following some information where to find some reliable information, but I warn you that there are smart people around that earn money on gullibility, and here I have to agree with CICAP

Watch out! If money are involved, there is something wrong

Watch out! If they are looking for followers devotees there is something wrong.

On element transmutation I suggest following books :

"Biology proof with low energy transmutations" ed. aquarius

"secret life of plants " ed. Sugar

On subtle energies that can be dominated with mind:

"Java's wizard" Ed Punto d'incontro . (You tube "new John Chang"

On mechanism that act on DNA

Youtube "Bruce Lypton seminar"

Concerning the extracorporeal experiences, called "astral travel" I have met "in dream" an extraordinary character ; I didn't know he was existing. After 4 months from have met him in dream, I found by chance a book that was telling about him, the book was repeating what he said during the dream. At the end I had the chance to meet him in Florence during a conference. The book I am referring is "Strovolos' wizard" Ed. Punto d'incontro

Last but not least, **CASTANEDA's books** ,You can find several information on internet. In those books you can find life teaching and acknowledge. They teach about Spirit presence without religiosity, and they explain about dreaming way, they are very demanding, I have read them more than 4 times.

New incoming era, involves remarkable economic and social remarkable changes, that will lead to a stable super civilization.

To who want to know how life can develop in the future I recommend the book " I met extraterrestrials"

The first Italian edition is dated 1978 but the book is from 60

Do not be misled from the title, that can let you know about a funny story, in reality it is a technical book written from an engineer, and it will give an incredible and possible vision of the future.

Most of the things said in the book have had confirmation in following years.

For example it was written about high temperature superconductors with ceramic look (against any logic as ceramics are insulators) Well in 1990 it has been discovered ceramic substances superconducting .

They foresee that money will be substituted from computer and then it will have disappeared (in 60's computer were not even existing)

It talks about recycling

In 2005 I saw a documentary which indicated possibility of building floating bridges for train as described in the book

High-speed rail and magnetic levitation are beginning to be taken into consideration

Mapping of DNA modification and the problem of the species are becoming current (but when the book was written it was unthinkable)

The way to cure sickness by using a combination of electricity and drugs began to be accepted

The rule that came out is: **Do whatever NATURE does, just do it faster**, it seems universally accepted

The triangle freedom, justice, efficiency is usable in many circumstances. In my opinion in Italy right now we are very weak in efficiency.

There are a justice and freedom not efficient, so clever ones and criminals take advantage

In fact the most popular concepts in fashion right now are :

1) Eat who can do it !

2) For every law there is at least an equal and opposite one

3) Italy is based on the work of few, for the good of many

In Physic there is the indetermination principle, but in the "Spirit" way, no one meeting (happening) is truly fortuity.

Personal thoughts

Going on with the description with my way of seeing, I will left the path of classical physic and therefore I will give to someone lostness fear.

someone will think "where does it want to go ?", " How does he dear to **discredit holy acknowledge** that was so hardly achieve from scientist ?"

Someone will just stop to read, other one will attack like an Aries, standing up as defenders of rationality.

But things must be said, and I assure you that it is not easy for me to write things that break rules.

I am not gaining nothing, on the contrary! It will be much easier for me staying in the accepted rules. After all many people love to read what they agree. They like to hear confirmation of what they already know, because they feel like it is increasing their knowledge.

What breaks rules... hurt!

22 Quantun aspect

A new vision

When humanity moved from geocentrically theory (earth center) to the heliocentric (sun center) it was neither instantaneous nor painless, it took place in stages and with many arguments.

What I will say can start thousands of arguing and disputes, because unfortunately the exposed principles are only partially "scientific" (verifiable)

I mean that I CANNOT bring quite repeatable and verifiable experiments, the most I can only show that a large set of phenomena marginalized by physic, find their location .

I list here various relativity principle (taken form Science encyclopedia Garzanti)

Galilean principle of relativity

Einstein's principle of relativity

Tehory of relativity

Tehory of general relativity

Relativity concept has changed dramatically from Galileo times to nowadays , some principle has continue to modify.

Galilean Principle of relativity

It has being stated by Galileo in the dialogue concerning the two chief world systems (1630), he affirms the absolute identity of mechanics laws deducted experimentally by two observers who take up as a spatial reference two inertial system (like system of fixes stars, or any uniform transitional motion, with any speed compared to that of the fixed stars; for these reference systems it applied the dynamic laws enunciated by Isaacs Newton's, ad in particular Inertia hence the name)

This implies that there is no way to establish which of the two mechanical experiences shall be considered still, and which one is moving. It also implies that from a mechanic point of view, it only make sense to speak about relative motion of two systems, while it makes no sense to assume the existence of an absolutely fixed system, as it will be not distinguishable at all from the other. As Galileo pointed out, the observer who does experiments on a ship cannot determine, just referring to the experiment, if the ship is stationary or in uniform motion.

Einstein's relativity principle

Assunto da A. Einstein come punto di partenza della sua teoria della relatività ristretta (1905), questo principio asserisce l'assoluta identità di tutte le leggi di natura dedotte sperimentalmente da osservatori che utilizzano sistemi di riferimento diversi, purché inerziali.

It has being take as fundament from A. Einstein for his relativity theory (1905). This principle asserts the absolute identity of all the nature laws deducted experimental from observer that use different reference system but they must be inertial

This principle is thus an extension of Galilean principle of relativity referred to all natural laws, not just mechanical ones: consequently the concept of absolute reference system loose means. Speed light (or generally, the one of an electromagnetic wave) in empty spaces. Following Maxwell equation, a general physical constant, unlined from any parameter (therefore a natural constant); based on the principle of relativity, it must therefore have the same value in any reference system. This consequence of the principle of relativity is the crucial element for the whole theory. The einsteinium principle is completed by adding the generalized Galilean principle that in nature no one signal (and therefore no one body) can move at speed higher than light, using mathematic demonstration

Physics admit possibility of isolating a certain part of space in which no external forces act, this Is called "isolated system"

Before we see how Einsteinian theories of the energy balance was described in an isolated system

Energy (total)= $E_1 + E_2 + E_3 + \dots$

Where E_1 E_2 E_3 were given by various forms of energy, kinetic. Potential elastic and heat electromagnetic

With the advent of relativity it was realized that it had been neglected a term whose energy value was superior to other energy form: it was about $E = mc^2$

So the formula was expanded

Physics accept possibility to isolate a part of space within which there are not external forces, this area is defined "isolated system"

Before Einstein theories the energetic balance in a isolated system worked like this:

(total) energy = $E_1 + E_2 + E_3 +$

Where E_1 E_2 E_3 were given from various energy kinetic, potential, elastic, heat, electromagnetic

With the relativity theory it was realized that it had been neglected a term with an energetic value far superior of all other form of energy: it is mass-energy $E = mc^2$

So the formula shall have been expanded :

Energy (total) = $mc^2 + E_1 + E_2 + E_3 +$

How was It possible that it had been neglected a summand of this magnitude?

Simple, energy expressed by mass was constant for the kind of experiment that were made then. Therefore the energy variation due to a phenomenon analyzed were accurate as to each term of the subtraction was added the same amount.

I'll explain with an example:

If in an isolated system, at the beginning of an experiment energy was 77 J (joule) and then it was 50 J, difference was $77\text{J} - 50\text{J} = 27\text{J}$

Taking in consideration mass. Energy increased let's say about 100.000.000J therefore we had to increase both minuend and subtrahend, but the resulting difference however did not change

$$(77 + 100.000.000)\text{J} - (50 + 100.000.000)\text{J} = 27\text{J}$$

History often repeats itself, mainly at symbolic level

In the new physics/extra-dimensional I'm assuming that things will change

23 Quantum aspect

Phenomenon of a new frontier

The following has been taken from the book "the secret of the universe" (F. Coppola)

The experiment of the two slits

Let's start with an experiment of great importance

Consider a source of "classic particles" that will be sent to a target: for example a machine gun that shoots toward a wall 10 meter away (not in a fixed direction but in order to cover the entire wall). Then we put a mask between the source and the target, made by a perforated screen, about 2 m from the target, mask may be a metal plate with two long narrow rectangular holes

It is clear that the target (wall) will be hit only from bullets passed from the two holes, while others will be stopped by the mask. Ultimately the bullet that hit the target from two long narrow rectangles that will be the "projection" in the target of the mask holes. We are still in the classic physics and everything is clear and understandable

Now we repeat the test with wave instead of bullet, for example we use sonic wave. In this case wave will hit the target not only where there are the two holes, but they will also spread in other part of the wall. If we can visualize places hit with stronger or weaker intensity, we will see a typical fringe figure called "interference shape" that is extending well beyond the slits projection. This is due to a wave phenomenon called wave interference: due to this phenomenon, the wave can affect target regions that will be unreachable for the bullets.

If we close one slits the interference stops, and the wave distribution in the target will become similar to the bullet one, in other words in the screen you will see the projection of the open slits (in reality the shape will be weak due to a wave phenomenon called "diffraction" but this is not changing the situation). In this case we use to say that the interference shape is destroyed. This is understandable from classical physics

Now let's turn to the quantum case: we repeat a similar experiment considering electron, obviously on a much smaller case. The source emits distinct electron, particle, not wave, therefore we expect to have the same situation that occurred in the bullet case, electrons should hit only two rectangular corresponding to the slits area. Instead we get an interference pattern as in the wave case !

But electrons are not wave, they are distinct particles.

Let's try to slow down the process, sending out one electron at a time; **actually we wait that one electron hit the target** before shutting next one. It is produced as a single particle and exceeds the mask reach the target as a single particle. However it can hit the target in area unreachable by a particle. As if it was a wave. Continuing to send single electrons one at a time,

eventually they reconstruct the interference pattern typical of the waves ! Although these are individual particles, in crossing the mask, each one, behaves like an extended wave that produce interference

But how it is possible that a single electron behaves like a wave and interfere with itself?

And then, in which of the two hole is passing the single electron ? To produce interference, it must be a wave and pass contemporary from both holes, something that for us is not possible for a single particle .

In this reasoning, we clearly apply to electron the concept of "classic particle", but it is no longer valid in quantum mechanics.

In fact until the electron is not revealed on the target, it doesn't exist in a definite state (said eigenstate) but it exists in a state potential abstract described from a wave function, and it is moving as a wave.

De Broglie and Schrodinger attempted to describe all the quantum world in terms of waves, abolishing the particle concept. Bohr and other physicist objected that when revealed electron is behaving as a particle and not like a wave (wave function is collapsing in that point) and they pointed out other aspects that make vain the explanation as a pure wave.

Initially they worked with small particles like electron, so it was natural to consider them more like a wave than particle. Now we have situation where we are using as bullet not only neutron, but bigger particles like for example fullerene, This one is a molecule with 60 carbon atoms. ("Einstein Veil").

At this point we can imagine to "understand the trick" looking what is really happening at the instant when the electron passes through the mask. In our opinion, being the electron a particle, it must objectively pass from one or the other specific hole (this is called "Einstein realism") and we want to catch him in that moment to understand his secret: it will have been like to look carefully a magician and to be able to discover the exact moment when he is making the trick

But to catch this electron in the right moment we must reveal it. To do that we can send to the electron a weak light, and verify if it is reflect from him or if it project a shadow. Therefore we place a weak light soured behind one of the two holes, and let see if we can catch the electron in the right moment. This is possible experimentally, but in doing that the interference pattern disappear, in fact or the electron pass through our hole, therefore it is revealed from our source light, and in that moment it became "real particle"; or it pass through the other hole, but when it pass from a single hole, if it is particle or wave it cannot produce interference.

Quantum mechanics cannot allows to have contemporary both the interference figure and the knowledge of the single hole from which the electron has passed.

Either is one or the other. Either the electron is revealed as an objective particle, therefore it doesn't produce interference shape, or it is an extended wave and in that case it doesn't pass from one hole only, but from both (but this last statement has some limitation and we shall say "it is like if it was passed from both")

24 Quantum aspect

In the past some physicist tried to underestimate the phenomenon, and preferred to give an "operational" explanation of what was going on: to see the electron while he is passing through a hole we shall observe it, therefore we must necessary disrupt the system and the interference shape disappears.

"Realistic" physicist were not so much amazed: the system was perturbed with an "invasive" means, and system adapted. What is wrong ? In fact this explanation, although partially valid, ignore some very deep implication, detectable only with other experiments. It is possible to eliminate the interference shape with an even more evanescent action, without an invasive measure. You actually need only the "menace" of a measure to change the system state. For this reference see the amazing experimental of L. Mandel's and other groups.

In the two holes experiment, there is also an other incredible aspect foreseen by Wheeler, which denies the seeming "reasonableness" of the "operational" explanation (based on the fact that measurement is invasive)

The experiment can be made both on electron or photons (photons are lights quantum)

At the quantum level particle that we call "material" are behaving in a way that in many ways is similar to how "force field" behave, like for example electromagnetic fields (light is indeed an electromagnetic field that is propagates as a wave).

Obviously there are several difference between the so called "particulate materials" and "force field" (for example first one are "fermions" and second "bosons" which create differences in their collective behavior) however those differences are not decisive on the examined experiments. Ultimately the experience of the two holes can be made with photons (light quanta) and indeed is much easier than the one with electron as you just need a laser. And now we analyze the experiment proposed by Wheeler

"Delayed choice" experiment from Wheeler.

Let's imagine a photon passing through the two holes like a wave and that is interfering with itself. As we have seen, to destroy the interference pattern, it is enough to observe it, just after he has passed the hole: in that case it is no longer a wave but a particle, and therefore it cannot pass from the other holes too. As he cannot pass from the other hole, the interference pattern disappear. So we can "decide" whether to observe the photon as a particle or to allow the interference shape like a wave.

We have say that we reveal photon "immediately after" has passed the hole . "just after" it means that it has passed very few time from the hole transit. But not matter how small the time elapsed, however the **Photon has already cross the hole**; moreover so far it has been a wave because we have not yet reveal it.

To clarify this point Wheeler proposed to do this. Let the Photon passes through the mask, like a wave, from both holes. At this point, **after the wave front has passed the mask** , we insert a detector not so far from (far enough to make sure that in the meantime all the front wave have surely passed through mask).

Actually we want to make the choice to observe photon as a particle, but after

it has passed through both holes like a wave. In fact the experiment is called "delayed choice" .

Surprised!!! When we turn on the revelator, photon start to behave as a particle.

What happens to the wave front that had just passed the second hole ? disappears into thin air?

It seems so ,but how is it possible ?

This experiment was actually conducted by scientists at the University of Maryland

Yet, we think, wave has passed surely even in second hole: in fact if you do not enter the detector (leaving everything else unchanged) the interference pattern is formed (which can happen only if the wave passed through both the holes) So, how is it possible ?

The reality is that this time we try to provide an objective picture of what happens, but an objective picture is not adequate.

It makes no sense to say that "the wave has passed" because only when we are measuring we can say that this had happened: before the measuring photon is in an indefinite state of **potentiality** or **Not objectivity** (someone prefer to say unreality). Then when we insert the detector , we can detect with certainty that the photon had passed only the first hole and not the second hole, and in fact there is no interference. But when we do not place the detector, and reveal the photons on the target (with the interference pattern), then we can say that each photons has done interference, like it was a wave transited from both holes; but we can say that only AFTER photon was revealed on target(in a place reachable only from a wave not from a particle), therefore after measurement

What we found really amazing was that what Photon decided to do through the mask (pass one holes as a particle or both holes as a wave) **depends on a choice subsequent to transit itself.**

In fact the detector is placed to reveal the photon after the wave front has passed through the mask. As Wheeler says, the "choice" weather to make the photon to pass from one hole only or from both is "delayed", it occurs after the photon has passed .

To make this things believable, we have to admit that what happened before is undefined.

We have to specify that in the experiment conducted at Meryland university, they did not use a screen with two holes but conceptually equivalent equipment, a laser beam was split into two separate beams, one of them was passing through a detector (which could be on or off) and finally the two beams were made to converge in the final detector, where you could check for interference

Wheeler experiment opened the way to many other similar experiment, the commune element is the same : **when an observer try to capture the position of a particle that theoretically is progressing as a wave, it seems to act like solid particles**

25 Quantum aspect

A new vision of the "isolated system"

To explain these phenomena we need a new vision, which requires some basic postulates

- A) it is not possible to have a "isolated system", which is free from observer
- B) the "observer" of an isolated system is part of the phenomenon
- c) the observer with his awareness is able to interact within the isolated system with a force F_x indeterminate and variable
- d) A second observer who controls the first observer becomes part of the isolated system; in this case isolated system will also include the two observers.
- e) The phenomenon F_x is detectable more and more, as we decrease the scale observed (particle dimension)
- f) The phenomenon F_x is increasing with the increase of average awareness/willing of humanity

The difficult point is to admit the force F_x , it is an ugly toad to swallow for those who believe that the universe is essentially material, but it is easy to understand for those who believe that the universe is mental.

For materialist, that are majority of physicist or scientists, require more than a postulate to convince them to change their minds.

Let's try to confuse their ideas with some preliminary logical arguments, then I will start to analyse acknowledged physical phenomena, like the entanglement phenomena, and I will try to put them in the picture.

A good force definition is : **"it is called Force, something capable of producing a change in universe"**

Is this statement reversible? Certainly yes

So we can say **"something that produce a change in the universe is essentially a force"**.

In school we teach that there is a distinction between Physical measurement size, and not physical; emotion or thought cannot be measured in conventional way. For Physical quantities it is possible to define a measure, therefore they can be measured. Physics has chosen measurement repeatability and rigours, therefore it is dedicated only to the physical phenomena easily measurable.

This started with Galileo, and it was the winning choice that brought the well-being (and pollution) of nowadays..

I call this mind attitude "mother science", because it is necessary in childhood, but it comes a time when we need to abandon the sure nest border, and we have to jump out and learn to fly.

Even in science it comes the moment where we have to detach from rigor and certain, from what we felt sure that has fed us, from what we are in a certain way. It is a jump in the blue , inside the swamp of uncertainty .

In your opinion emotions can be considered forces?

Let's see if they match the definition.

Are they able to effect change ?

Yes of course, but they need to be enlivened by a physical body, that reveal and amplify them. All the life chain is based on inner emotion forces such as emotional pain and pleasure. We can replace them with instinctive thought or if you prefer with statement like "survive " and " "replicate yourself" but the sense of the speech doesn't change.

26 Quantum aspect

We continue the discussion on "isolated System"

Given an isolated system, the classical physics, can define the resultant force of the sum of all forces within the system

$$F(\text{total}) = F_1 + F_2 + F_3 \dots$$

In the model I proposed the equation is incomplete and must be corrected as follows:

$$F(\text{total}) = F_x + F_1 + F_2 + F_3 \dots$$

Where we hypothesize that F_x is the influence that observers have on the phenomenon itself

So far we thought it was possible to observe without interaction, this is true only if the phenomenon is macroscopic and observers have little ability to generate the F_x

But what would be this F_x ?

I postulated that it is a force

It will have all the characteristic of a force, but with a weakness compare the scientific aspect: it is NOT measurable, it is missing his unit of measurement and lack tools to measure it in a repeatable manner. But something is there as there are side effects.

I remember that the characteristics of a force is expressed by a geometrical entity called "vector" that has a direction, towards, intensity and point of application.

We continue with our fantasy flight, considering love emotion.

The management and direction of such an emotion could be linked to desire to seek company and the union with the beloved one. Intensity is the degree of in love, ranging from a slight attraction to the uncontrollable passion, certainly it is not measured quantitatively, but it exist.

How much do you love me?

If there is a quantity question is because we think there is a quantitative response.

Very often for male situation is :

"I love you 100% (just **before** ...)

"I am not so sure how much I love you, but I am sleepy (**just after**..)

Therefore love size is indefinable and inconstant in time: therefore cannot be measured.

If it was possible to measure F_x with some kind of instrument it will have been different.

In reality there is a phenomenon (you can find information on internet) that use a static measurement to reveal F_x . It is possible electronically to use the a random series of binary values 1 – 0

A specific device is generate millions of random events per second, by placing

an observer in front the random generator will affect the output 0 /1 in pre-determined using only the force of desire.

Before going on, it is necessary to talk about a very well-known phenomenon that has brought serious problems to who doesn't believe the effect of thought on matter. Thought has some energy, however small it may seem obvious to me.

With the EEG (electroencephalogram) we measure brain activity from the electrical point of view

What we measure is not said that it correspond to the initial spark, but it could be also the result of its amplification due to a series of complex electrochemical reaction .

Despite from amplification mechanism, in my opinion the true think is referred to the first cause, that has started the mechanism.

Now we go back to the question: can thought affect matter without electronic amplification

Long time ago in 1976 we liked to build simple electronic devices of various type

One of these was used to generate a random numerate of 2 bits True or false.

In computing a "hardware random generator" is a device that generates random numbers from a physical process. These devices are often based on microscopic phenomena that generate a random signal called "noise" such as thermal noise or the "photoelectric effect or other quantum phenomena

These process are, in theory, quite unpredictable and the assertion of the theory of unpredictability are subject to experimental verification.

A similar device was connected to a computer to generate a high number of random events such as true/false. We are talking about millions of events.

A University, that knows how to deal with statistic, revealed a surprising phenomenon.

If an ordinary person next to the computer (but even far from it) , try to influence the output sequence, for example deciding for the variable "true", well, it happens that a very small percentage of the order of 1 in ten thousand or so, the background are changed in the desired direction.

The important fact is that the random deviation where documented from the blank test.

Without influence, everything was normal, respecting the complete randomness statistic.

A real random phenomenon will have to complies with statistic rules

It has being found that if a person is focusing on the output "true" for a certain period while the extraction is analyzed, and the cases evaluate are many (over a million sweepstakes) it is possible to reveal a variance ALWAYS ACCORDING WITH THE THOUGHT OF THE PERSON INFLUENCING MACHINE.

Someone can object that the variance is not meaningful , one of course not, but if this is repeating in a constant way ..?

If then the same investigator focuses on the contrary output choosing "false! Then the deviance will follow the way wanted from experimenter.

This research enlist for year, information are available on internet. I heard that there is a chain of those random machine around the world but i didn't go deep on the issue.

The experiment has being held from Princeton university. There is a documentation and a university involved. Therefore there is an assumption of responsibility by an official body such as the university

27 Quantum aspect

Another basic premise regarding the new "isolated system" might be this:

Although in the "isolated system" there is nothing we cannot speak about "emptiness"

The space looks empty because the unending process of creation and destruction occurs on a very short time intervals of distances (Pagels, physician)

The atom "hardness" makes us think of a hard solid "matter" object, as already thought by Democritus and Newton, but in reality it is generated from a counter position of repulsive forces. To understand that we can imagine two powerful magnet repelling each other: beyond a certain limit we are not able to approach them

If we could not directly observe what happen we will have thought that there was a barrier, a "wall" or in any way a barrier material "hard" that prevents the approach of two magnets. Instead everything is created from a series of magnetic forces.

At CERN they make two sub nuclear particles to collide, the particles are crossed each other like they were ghosts, and re-emerge on the other hand, almost without interaction

This is hardly surprising because the two particles shall have "crashed" following the materialistic classic model. But at a quantum level, particles are described like wave function that interact with a different system, far away from coarse material way that we are used in macroscopic world described by classical physics

Contemporary physics consider each material particle as a physical field and it is well known that different fields can coexist in the same space region. For example the reader in this moment is immersed in Earth's gravity field and Earth's magnetic field: a compass will tend both to fall in the ground and to align its needle pointing north. Moreover the space around him is crossed by various electromagnetic fields that carry signal from different radio station, television, mobile telephones.

Ultimately, contemporary physics no longer distinguishes between field and particles, and consider all the manifestation of nature, sub-nuclear level as fields.

Any material or any particle strength is actually a field that permeates empty space. More precisely it is an excited state of vacuum.

We remember Gamow's words referred to quantum wave function : "**what was vibrating remained a mystery**"

The probabilistic interpretation of Born seemed temporarily overcome this dilemma by interpreting the wave function as a function of probability, but further physic was forced to adopt a model in which empty space is quantized.

Proceeding in smaller and smaller space-time scale, energy fluctuation due to virtual particles become bigger and bigger !

Physician Pagels sais (from "the cosmic code" Bollati Boringhieri ch. 21 pag 257)

"The empty space is actually made of particles and antiparticles (virtual) that spontaneously created and annihilated. The space looks empty because the unending process of creation and destruction occurs on a very short time intervals and distances. The vacuum seems quiet and calm on a macroscopic scale, like an ocean, that seen from a plane at high altitude seems without ripple.

But if we are on the surface of the water aboard a boat the ocean seems very different with giant waves floating above us. "Only particle with sufficient energy are able to "survive 2 and to appear as "real particles"

Each vibration gives rise to different fields/particles, like to what happens in Acoustic: different vibration in the air, produce different sounds (think for example to different vowels)

Everything is traceable to a single phenomenon class, vibration of quantum vacuum.

Light is a wave phenomenon and therefore it is cyclical: its vibration are electromagnetic type and its frequency is very high, about half a million billion Hertz. Electromagnetic waves, like light, are made up of linked electric and magnetic field that are oscillating and propagating. Even radio and television waves are electromagnetic waves but their frequency is much lower than the one of visible light

A medium-wave Radio (AM) operates at frequencies between 500.000 and 1.600.000 cycles per second, or between 500 and 1600 kilohertz (one kHz or kilohertz equal 1000 Hz), A radio frequency modulation (FM) operates at frequencies around 100 million cycles per second, or 100 megahertz (1 megahertz or MHz is equal to 1.000.000 Hz)

Quartz is a mineral that under certain conditions may create a small oscillating current with a well-defined frequency, that can be useful to measure time with great precision. Modern quartz watches exploit a characteristic frequency of 32 MHz

The frequencies used in PC is different but they are using same principle.

TV operates at frequencies of a few hundred megahertz. Cell Phones transmit at 900 MHz or 1800 MHz; this last one is a frequency higher than a GigaHertz (GHz) as 1 GJz is equal to 1000 MHz.. Which means a billion cycles per second, we are now in the realm of so-called "microwave"

A microwave oven emits electromagnetic waves with a frequency of 2,45 GHz at even higher frequencies are the infrared rays, visible light, ultraviolet, X-ray and finally gamma rays, which are dangerous radiation from radioactive materials.

Shortly the elementary particles, although they can produce stable structures and "solid" like atom, **must be considered such as particular vibration in the structure of space-time**

Manu people are not aware of those acknowledges, which have revolutionized the concept of the material universe, and other people find it hard to believe.

But ...it is like this.

It is correct to say that everything in the physical universe , has a cyclical nature.

If we were not western men of twenty-first century, practical and down to earth, we will take in serious consideration what wise oriental men declare. Since millennia they say that All (any material and spiritual event) is a combination of vibrations. In their tradition, the found vibrating universe is symbolized by the sound "Om" o "Aum"

But back to everyday reality and let's examine something more simple and verifiable : Biological rhythm

In conclusion the answer to question

What are the vibrating things ?

The answer is :

"in the microcosm of elementary particles EVERYTHING IS VIBRATING"

28 Quantum aspect

Resonance phenomenon is the basis of all microcosm phenomena

If all vibrate, then we can say that **resonance is the mother of all phenomena.**

The force acting on matter behaves in different ways if the object that receives the force is free or if it is blocked in one place and obliged to vibrate.

If we want to move faster as possible a free object, it will be enough to increase the force. Greater is the force and faster the object will start to move

This is not true for an oscillating body, if we want to move a swing, we see that it is not worth to increase too much the initial push, in fact there is a limit on the initial push, beyond which the swing will start to rotate and not oscillate.

To get the maximum swing oscillation we have two possibilities

A) A single hit with a force that brings the seat to the top limit without making it turn. Who will be sitting on it will take a good shake, especially if the force will be an impulsive force (like a hammer hit)

B) A less traumatic way is to give the right shot at the right moment. It is called resonance. We can give 3 or 4 shots and a lot of small strokes. Even a child of 2-3 years hitting the swing in the right moment, can make the swing, with a big man sitting on, to go in oscillation, and there will need a lot of little shots to keep the swing in oscillation. Cell phones have exploited this principle, emitting little energy but giving billions of hits per second to a receiver oscillator

29 Quantum aspect

Now it is time to start the cold fusion subject

Let's connect the theoretical that we have discussed till now, with a real phenomenon called cold fusion, using the information available.

In 1989 started the cold fusion history with great announcement !

I remember how eagerly I was waiting news from Geneve where Fleischmann and Pons had set a conference with the presence of the highest authorities. At that time Rubbia was the director of CERN. One of the things that worried me ever since was the repeatability of the phenomenon.

I remember a Fleischmann declaration in reply to the question arise from scientist if the phenomena was always repeatable. He said: "in truth, with the latest electrolytic cells we have had some problems in turning on, they didn't want to start. But now I have taken situation under my control and everything is solved"

Rumours said that there was some secret known only to the two researchers , who would not divulge for obvious patent reasons.

There were rumours about pulsating current rather than continuous or otherwise, I read everything available on the subject. From research on classic nuclear fusion centre, there were voices of despair: the expensive financing were slowing down, on-going experiments in danger of being cut... A loud voice began to demand proof of external repeatability, made by other independent researchers.

Repeatability did not come, or at least not arrived in the measure declared from the authors. Order of magnitude were much different from what originally stated by F&P so that everything could be braced back to possible measurement errors.

F&P claimed that in their first experiment done with an empty bottle of liquor, after days of electrolysis the container exploded. But the various laboratories continued to get reports of non- repeatability. Gradually things changed, even the few positive tests were classified as "deliberately" as possible methodological errors. The irony was that "nuclearist" were the first one to blew on fire, and worked so (they are doing it again) that the news was classified as absurd stupidity for gullible.

But the dice was throw. Other researchers looked in that direction and began to get reports of strange methodologies to produce heat. All methods however, had a lowest common denominator, they were not repeatable, or rather some people get big success, but when other people was following their path the experiment failed. This helped the ironic attitude of nuclearist that dismissed the question definitively.

Most of the researchers were in good faith, while some big name in scientific world have acted with cold calculation, and their subordinates followed like sheep.

The lowest level in this history was when they try to treat cold fusion like a paranormal phenomenon, on the other hand this phenomenon that occurs with

someone but cannot be repeated by others , leads easily to think about paranormal.

Paranormal phenomena is seen from official science , like wool over the eyes, like Satan for inquisition.

An association called CICAP took advantage from the situation, and they started a so-called critical inquiry.

Just the fact that an association that usually is involved with paranormal and illusion, was interested in the phenomenon, was discrediting.

It shall be said that CICAP was proposed from Piero Angela in order to find out the frequent frauds made by would-be magician that were trying to steal money from gullible guy. At the initial presentation, very rigorous and scientific, joined many high sounding names. I broadly supported the same rigorous scientific ideas of the Statute.

In fact the original association of big-names was only in the paper, but didn't really exist.

None of the big names in the initial signatories of the manifesto has gone beyond simple adherence, at most they gave some written.

There are not specific laboratory or active collaborators. All the work is in the hands of a secretary with a degree in psychology with some acknowledge on how to make magic trick.

In reality when they have to check something, they meet in three or four who have appointed themselves big expert, usually a medic, a magician and when we are lucky a technical, that happened to be there by mistake, all willing to have a little bit of free visibility in media.

They have a website that speak basically of the things that they know: illusionism! You will read about a lot of dinner, and conferences where the only proposal is the respectable reasonability, but no one serious research.

With such an "Brancaleone's Army" these gentlemen are allowed to attack physical talented as Prof Preparata.

(Prof. Preparata with great effort wrote a theory on the phenomenon. It was difficult to digest from the scientific community, because it was too innovative. The stupid controversy with the Cicap, has prepared the field for the ironic teasing of his colleague. Prof Preparata is then died from a tumour: could be that the attack he had received have had psychological consequence on the sickness.)

If it was only for their references and ability, for sure nobody will have care about them. They have had a good visibility from Italian media, given to them from excellent Piero Angela's programs

They will not have the decency to apologize when cold fusion will be soon in common use.

At a superficial level, it is possible to demonstrate everything and its opposite, when it comes to explanation science . Using the scientific ignorance that characterizes most of the population, it would be possible to find followers to the idea that earth is not spinning around sun.

Which will be the direct empirical evidence, perceivable by anyone without the use of tools and knowledge that could prove the contrary ?

The common man is not different from the one of 2000 years ago, he understand (or he thinks he understand) what he see directly, for all the rest he must have faith in priest and in their world. It doesn't change too much if today's priest worship the modern science method instead of the God Sun.

This association does not deserve further comment, and shall be dismissed with the phrase "do not care about them, just look and go forward"

30 Quantum aspect

Meanwhile the research were multiplying and many open mind independent researchers continue to present variation of the phenomenon. At a certain point came out Prof Piantelli which started the way for a particularly cold fusion type, with two essential characteristics :

first of all using simple materials such as nickel and hydrogen

second point it worked in medium to high temperature from 200° to 400° or more. This allowed a prospective of an immediate usage in production of supersaturated vapor that could be used immediately from turbine to produce electricity.

The most interesting thing was that FF Piantelli's type produced tens of watt of power working continuously for months. The measurement error was not to consider.

Unfortunately when you tried to repeat in other laboratories, it was failing as usual.

The availability and cheapness of material combined with the simplicity of the test, pushed many to engage in home experiments. As I said, I was one of them for a while. I've subscribed to a magazine called "infinite energy"

At a certain point stunning news came from America. In a conference was presented an apparatus that was producing more than one kWatt power. It was about some nickel put as a very thin layer on some little ball. Everything was subject to special electrolysis. The phenomena were verifiable by journalist (you can find a video in the forum section video cell Paterson) They have showed live film. it looks done !! Ceti society that had the patent declared that they have start to sold the industrial version within few months

But even that time there was not repeatability. The new batch of little ball nickel coated was not giving the same result like the first ones. It just seemed a "haunted" history. It surely was a terrible blow for CETI company's lenders, and a huge question arose: how was It possible that the new lot was so much different from the first one? Was nickel different or was the base how the little ball were made?

At this point everybody had to accepted that in this type of experiment there was something weird or absolutely incomprehensible

According to Feng shui it is not enough to choose the right place and the forms how you have to build. It is also important to choose the time in which to start construction.

Perhaps the poor repeatability of the experiments with the ball was generated by the difference in their time moment (if we follows feng shui we assume a difference in sidereal time, or in the position of the earth around sun) in which the balls were produced.

The rest is the recent history, 03/03/2010 in "energeticambiente" forum appeared a discussion lunched by MgB2 announcing that Chemical engineer Andrea Rossi had obtained heat and repeatability.

Once again it was with Nickel and hydrogen. The rest you can see on the forum:

14/01/2011 first public demonstration of E-cat

After the first demonstration things must be taken in consideration keeping in mind new information

First of all they have used normal hydrogen and only a gram of nickel

It is known that they used a lead shield and radiation are minimal, that the ignition temperature is at least 400°, and it is initially made with a resistor. But it seems that sometimes process is starting without needs of heating.

It seems certain that nickel is in a state of nano-powder, or it is lying in a ultra-thin film on a suitable base, that can receive the high level of heat.

It seems certain that there is an additive that catalyzes the phenomenon and that during the reactor operation gradually turn nickel to copper.

Rossi says that it doesn't seem so much an adsorption phenomenon as expected after Piantelli experiment

In fact Rossi in some case states that he achieve nickel fusion, and this will confirm idea that it has nothing to do with Nickel crystallization.

Personally I think that heat plays a role in the initial cleaning process of nickel eliminating its initial oxidation, as a way to eliminate oxygen from nickel is heating it to high temperature in hydrogen atmosphere.

Prof. Focardi declared that for all last year he had used this system to heat his apartment. Bologna experiment worked properly and it continue to repeat itself since one year, for this we believe in his repeatability.

There is heat but there is not the radiation that shall develop in those conditions. Therefore it is not part of phenomena known so far.

The theory must reflect the reality; reality is not changing to adapt to theory. We need something new, a new theory that keep in consideration what we have not consider till now.

31 Quantum Aspect

Super-affinity theory

When you are searching to understand a phenomenon, and you have evaluate all "possible" explanation without any result, it make sense to look at the impossible.

And if they were different kind of fusion ?

You may consider two kind of fusion: the one that follows classic physic rules and the one that do not respect it

Let's start with a paragon :

First group is the fusion known from the official science ; in this case fusion occurs a methodology similar the Bowling game, one or more balls hit the pins (target atoms) changing their disposition, and possibly breaking something and creating new pieces.

Now I assume a second group of reaction that occur due to a resonance between two very specific items, we call the phenomenon **SUPERAFFINITY** .

I clarify

Let's imagine an orchestra playing a particular melody in a theater, now suppose that in the theater outside from the orchestra there is an independent player with a trumpet that is playing the same melody.

Suddenly a disturbance occurs, there is a pause and orchestra is readjusting. Well the independent musician was playing so well that orchestra is inviting him to join them and became a member of the orchestra. Obviously this will produce a minimum of fuss, they have to bring a chair a lectern and the create a place, so the space occupied by the orchestra will grow slightly. This hustle and bustle will be perceived outside as an agitation comparable to the heat.

This type of phenomenon is more likely to happen when orchestra must take a small little external player. If the external player are a lot the phenomenon became more complicate and It is less probable.

Compare now nickel atom with orchestra, atom's particle are the orchestral, all together they play a music. Hydrogen atom is the external player. For its inner nature hydrogen atom is playing a music very similar to nickel one, this is what in physic we call affinity.

Until now I thought that affinity was due from crystal lattice, due to the particular disposition of crystal electronic cloud, Now I am assuming that **there is a kind of resonance between the intrinsic nickel atom and hydrogen atom**.

To clarify I will recall some information about wave.

Wave analyze

A perfectly regular cycle viewed in a time function, will have a sine-wave shape, the classical wave round shaped. Musical instrument produce sonic wave more complex. For example a violin produce a wave, that for his shape is called "saw tooth". Shape wave established the instrument "tone" (for example the flute has a very different tone from the violin and in fact its waveform is more like a sine wave) The difference in waveform allowed us also to recognize the various vowels and consonants in the various spoken language and even the timbre of different people .

The waveform of a sound can be displayed by connecting a microphone to an electronic instrument called the "scope". The modern electronic keyboards (or synthesizers) can produce artificial sounds, creating waveforms that do not exist in nature.

Any waveform, however complex, can be decomposed into pure sine waves, and can be rebuilt by adding these sine wave, according to the so-called "superposition principle". These waves have frequencies that correspond to the fundamental frequency multiply by an integer, and are called harmonics (whose name derives from music theory).

For example note LA of the violin will have its fundamental harmonic of 440 Hz, but it will also contain harmonics of 880 Hz, 1320 Hz, 1760 Hz, 220 Hz and in general a whole number multiplied by 440 Hz,

This harmonic structure described mathematically by "Fourier analysis", it is related to the QF phenomenon of "quantization", in which certain physical quantities can take the value only of integer multiples of a basic value.

Going back to acoustics, we have to think how CD can play sounds. Cd contain a code consisting in bit sequences, that can take value 0 or 1, and express information about how the air shall vibrate from the speakers to play the desired sounds.

The code consists of group of 16 bits (2 bytes) such as 0110011101001101. Each value of 16 bit represents a number between 0 and 65536 (2^{16} raised to 16) . This number identifies the amplitude of the sound wave at a given instant. Each second of playing contains 44100 of these data (like to say that CD contains sounds sampled at 44100 Hz) To reproduce the signal in stereo, this is done twice, once for the left channel and one for the right.

Ultimately a seemingly random sequence of 0 and 1 generates sound that have meaning for us and relive memories an emotions.

32 Quantum aspect

Let's go back to superaffinity

Let's consider an isolated system containing a nickel atom, a hydrogen atom and an observer. I have already state that in microcosm everything is vibrating.

In the isolated system all the acting forces will provide a series of pushing vibration .

$$F \text{ (total)} = F_x + F_1 + F_2 + F_3 \dots$$

The forces will induce a total vibration $V(\text{total})$

$$V(\text{total}) = V_x + V_1 + V_2 \dots V_N$$

We can say that the V_1 V_2 V_3 in a way correspond to the harmonics of the Fourier series.

We could also speculate that :

V_1 is the vibration of electric field

V_2 is the vibration of magnetic field

V_3 is the vibration of gravitational field

V_n shall be generate from other eventual elements that may be present, for example if we introduce a magnesium atom, it can, with the "music" of his orchestra, interact and modify total nickel vibration (I am trying to introduce a different concept of catalyst compare classic physic).

But what would be the **V_x** ? In my opinion it corresponds to the vibration generated by the observer. The observer is an integral part of phenomenon (as mentioned earlier), he is behaving like a orchestra director, that is able to synchronize different phenomena.

There will be situation where he will find low quality unsynchronized players, in this case only a good skill from the director will allow the success of superaffinity.

If the player are good the influence of observer V_x may be irrelevant. In which case we would have a repeatability obtained by any observer (even low skill directors) . So phenomenon becomes repeatable and usable for practical purpose

Going into practice, in the nickel case we need to find the optimal conditions so the synchronization produced from the observer is not necessary.

Let's start to study reaction **$Ni + Cu = H$** assuming that Nickel associated with Hydrogen will turn into copper

Nickel exists in nature in various isotopes

(number between bracket represents the sum of protons and neutrons)

Ni (58) with 30 neutrons naturally present in 68% (ignoring decimal points)

Ni (60) with 32 neutrons naturally present in 26%

Ni (61) with 33 neutrons naturally present in 1 %

Ni (62) with 34 neutrons naturally present in 4 %

Ni (64) with 36 neutrons naturally present in 1 %

Even the copper exists in nature:

Cu (63) with 34 neutrons naturally present in 69 %

Cu (65) with 34 neutrons naturally present in 31 %

In previously assumed superaffinity there must be an embedding with the minimum possible mass discrepancy.

Consider isotope Ni (62) with 34 neutrons, if we add one hydrogen atom (proton and electron all together) we can realize that we will have Cu (63) with 34 neutrons. A nice joint, will it be a coincidence ? (Maybe the second kind of nickel used from Ceti was free of this isotope)

(N.B. at the time it was written it was not known that this isotope was preferred)

The missing mass turns into energy, from experimental results it seems that this energy is not issued in radiation dangerous form, in fact we are not in standard fusion "bowling" type, here we are in soft superaffinity realm. Therefore little disruption allows kinetic energy to escape as Kinetic and light vibration that it results into heat.

Now if we just approach nickel isotope and hydrogen, it is not sure that the superaffinity fusion will take place for two reasons :

1) Probably harmonies played by nickel and hydrogen are similar but not identical, it is conceivable that there is a threshold of "not-affinity", that you have to overcome so the reaction can take place. Like saying that if the two frequencies are equal 98% and the minimum threshold is 99%, you must find a way to change either one or the other so that the synchronism pass 99%

2) even if the similarity exceed the threshold, it is uncertain whether the phenomenon occurs. Remember? It is important that in the orchestra there is a need of a new reassessment. It is like a government reshuffle, sometimes it is the reason to introduce a new element that provides more stability to the government.

We clarify now the two issues separately

I assumed that nickel and Hydrogen frequencies were similar but lacking super-affinity, there is the need to pass a certain threshold.

Let's do a numerical example. Suppose that nickel has a frequency of 750Hz and the Hydrogen vibrates with a frequency of 700, not enough to enter in resonance.

We can heat the system, bringing it for example at 1000° assuming that the frequency of nickel goes from 750 to 1200 Hz

During the heating process two frequencies curves intersect, therefore they achieve the threshold of super-affinity. This may explain the trend temperature like a sawtooth, in both experiment Piantelli and Rossi.

Continuing with fanciful hypothesis, we may consider that adding potassium or magnesium or any other mixture, you change the vibratory state of the surrounding space and thus going to affect the vibration state of nickel and hydrogen. Selecting suitable catalysts, we obtain an approach to the beloved Super-affinity.

For the moment I do not know how you must choose the catalysts, we proceed by trial and mistakes (for this, I noted the strange mixtures proposed by Mills as catalysts in his fusions, see post 947, chemically they do not have chemical logical connection, and in some ways validate super-affinity idea)

Perhaps there is a relationship with the practical rules according which the melting temperature for an alloy is lower than the one of the metal with lower melting temperature . For example, the alloy Sn-Pb. 63%-37%, used for brazing (brazing= process to connect in continuous 2 metallic elements using infiltration of a filler material) lead plates, has a fusion temperature of 183°, compare to the original 232 and 327 degree of the original elements.

This feature is used to join together the lead plates using a material that is akin to lead. Brasator learn to utilize this little difference in temperature to join together the two plates without modifying them structurally .

Let talk about second point, needs for readjustment.

A substance is in equilibrium as long as it can. But when a balance is broken, there is place for a new balance prospective. It is in the uncertainty of these possibilities that can work the choice of super-affinity . Could be that it is not the most probable, but there is a non-zero probability that It will occur, and this is enough, because taking in consideration a large numbers of reagents the phenomenon occurs.

But what can disrupt the balance ? One factor could be the heat that spread, shakes and change crystallization. Another factor could be the pressure, this changes with the heat. Finally we can think to the possibility to introduce a perturbative agent like a weakly radioactive element .

Assuming to split the phenomenon in three points:

- 1)Phenomenon "Caronte" that concern the way to split H_2 in two proton
- 2)Phenomenon "Star gate" disappearing of protons from this physical dimension
- 3)Phenomenon "super-affinity" re-appearance of the proton in this reality but in a different positions, helped by a high vibration affinity and minimizing of the system energy

"Caronte" effect

The main issue concerning hydrogen adsorption in nickel could be the fact that H_2 molecule is very stable. What we have seen till now suggest that is only the single proton that enter, not molecule which is too large. Therefore to add Hydrogen to the system is not enough, we have to help the splitting in various way. Let's talk about 4 main ways:

by simple superficial adsorption,

for high temperature,

with electric shock,

for transportation, through a suitable catalyst that act as a boatman (from which the mnemonic name "Caronte")

It is known that some metals such as nickel, palladium and platinum spontaneously adsorb molecular hydrogen on their surface, promoting the breakdown of molecules.

The amount of protons that migrate in the metal lattice is high, but can be further improved.

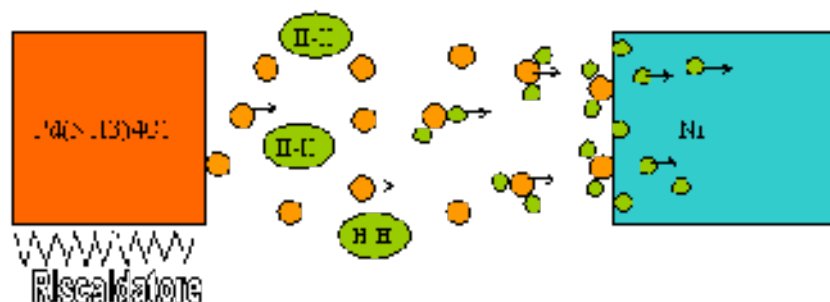
For example if we go up to 5000K of temperature, 95% of hydrogen is splitting into protons. The problem is that you shall have a hot zone of separation near Nickel surface with lower temperature

Splitting with electric and magnetic field has the characteristic that, next to plasma spark there are definitely split molecules by ionization, but as soon as you move few mm start a phenomenon of rapid recombination with the formation of H_2 thus nickel must be immersed in spark In the blue electrical discharge

There is an additional method based on hydrogen transport by another element that has chemical affinity for hydrogen, is able to hook it and to let him go. If the element has too much affinity is likely to form a hydride too much stable and does not release protons to nickel matrix. Concerning this point we quote a passage from a thesis discussed at Padua University (department of electrical engineering) For hydrogen storage system (prof Giuseppe Zollino Grad. Boris Jelcic AA2009/2010)

[...] Other methods require the preparation of certain materials, such as the calcination at $500^\circ C$ in air of $Pd (NH_3)_4Cl$ **with production of a small palladium clouds**. Cloud is able to trap more than one hydrogen atom for each palladium atom. At room temperature and with pressure of 1bar were obtained 0,1wt% avec a ratio H/Pd equal or more than 2

Hydrogen **spillover**, that is hydrogen diffusion from a surface able to dissociating H_2 to an adjacent surface of a solid [...]



NB. Spillover indicate maximum efficiency of a process.

Figure n.1 – Catalyst with effect Caronte

The mysterious Red catalyst could be incorporated in this speech. Probably the metal is not Palladium (too expensive) but perhaps iron, since it was found in large quantities in dust analyzed

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I remember that here we are assuming, starting from following postulates:

- 1) There is a cold fusion (FF) Nickel-Hydrogen
- 2) The information collected to date until now are reliable
- 3) CF phenomenon is repeatable (as basic experiment we assume Piantelli's one)

Recall of tunnel effect

It is a fact the **presence of electromagnetic barrier** that prevent proton to enter the nucleus, therefore, if something is able to enter nucleus we have to think to some peculiar "tunnel" effect

In a web site there is following short speech :

Tunnel effect is a quantum effect that allows a transition to a state prevented from classical mechanics. Let's think to have a particle and having to overcome a barrier of undefined size (a mountain to climb) .

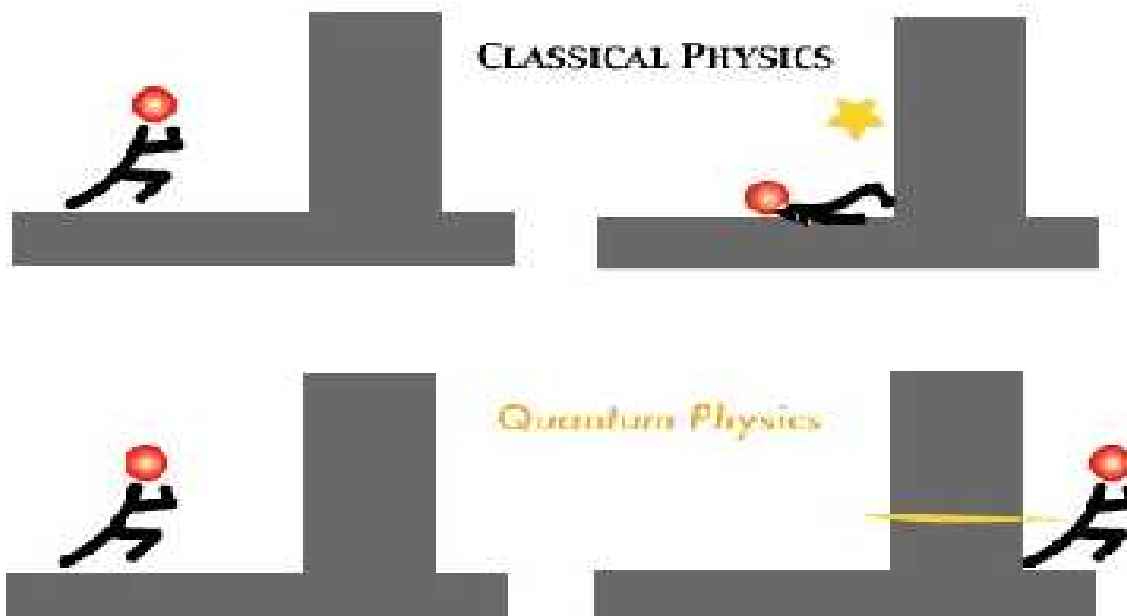
According to classical mechanics, to overcome this barrier, the particle must have a minimum energy.

Quantum mechanics instead, requires that the particle has a chance, lite but not zero, to cross spontaneously a barrier arbitrarily high.

The particle can then, familiarly saying, get over the barrier without climb it. In macroscopic world this is unthinkable, and you see this only in the movies.

Yes this phenomenon is so true (at microscopic level) and important

TUNNEL EFFECT 2



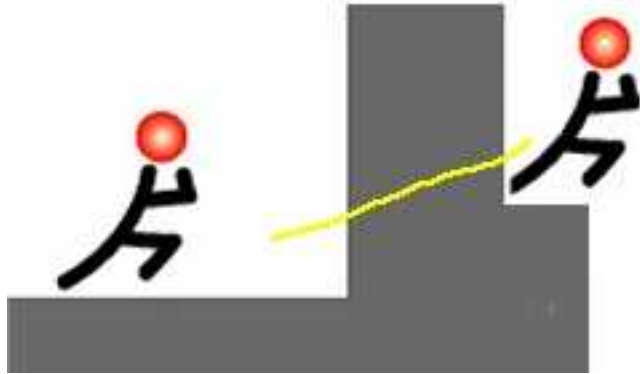
Interesting element of this phenomenon is that for Heisenberg uncertainty principle, **it is not possible to observe a particle while it is passing through this barrier, but only before and after the transition.**

To who ask me why cold fusion is not connected with a tunnel effect I answer:

- First the barrier height is dramatically higher this would still be overcoming
- Second the main difference is that on arrival proton is in an energy state higher than at starting point.

When (for simplicity) we consider the reaction of nickel isotopes+ proton + electron = copper we have to keep in mind that copper will be in an excited state of energy and will be forced to emit it as a radiation.

Therefore It is like if proton had undergone an uphill tunnel effect



Is interesting to note that the reaction will not happen in normal conditions (it will have being visible), there must be a precipitating factor or rather a set of causes that trigger it.

First of all we are interested in determine the factors that enable the phenomenon, the understanding can wait later, as for now we are not interested in knowing why the proton enters, but it enough to state the entrance in nickel nucleus atom.

Therefore we can say that it exist a condition X that for some reason in a certain moment causes the proton H^+ to disappear, and to re-appear soon after in the nucleus.

This condition X is a kind of portal that is activated under certain conditions

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Star gate effect

Let's imagine two armour negatively electric charged with equal electric potential, with a proton sitting in the middle of two. It can be drawn from both sides as two forces are equal. What will do proton ?

In this situation we have to look at Quantum rules, as we are in sufficiently small dimension, therefore the Heisenberg uncertainty principle will rule.

In essence, if we assume that the proton occupies exactly a certain space, we CANNOT say that it is standing there, or we cannot know exactly its position or momentum.

In the double slit experiment and in the alike one already mentioned, but more in general in quantum world, when we are trying to catch a particle, and the particle cannot be seen in a particular state, strange things happen.

When H^+ enters it finds 4 electric charges at the 4 vertices of a square: if it passes in the centre and the charges are well balanced we have the following situation. Therefore could be that is the crossing to enter and exit from crystal lattice that creates the phenomena "dimensional shift" or a tunnel effect with heat overproduction.

Therefore we can assume that it is not relevant the amount of Hydrogen absorbed, what really counts is **the movement of adsorption or release**.

I will define "**Star gate area**" the uncertainty created in the crystal lattice.

I will also define "**Star gate Phenomenon**" the supposed inter-dimensional shift.

What would be this area?

When I studied Ferlini's experiment I tried to understand what Ing. Ferlini meant for uncertainty area that was affecting vision.

His way of saying was at least strange. What did he mean by uncertainty area in which the magnets one moment were attracting and next moment no ?

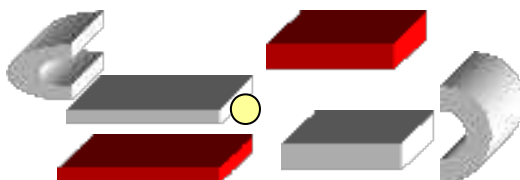
There were long discussions between people with high degrees in various disciplines, in the end it was suggested that Ferlini was referring to the amount of force line in an uncertainty state.

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Experiment Eng. Ferlini

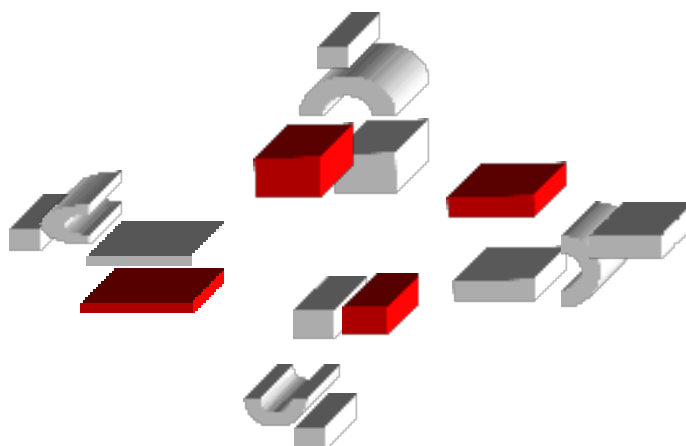
In his book entitled "The magnetic barrier", Ferlini tells how in the course of research, it had randomly noticed a strange visual phenomena generated by two permanent magnet interact.

Placing two magnets shaped like horseshoe, one opposed to the other so that opposite poles attract, if you approach magnet very slowly, they reaches a critical point of attraction. A few moments before the force of attraction is small but with a further little effort attraction increase very strongly.



When this happens, Ferlini noted that in the central connection between two magnets the look of space was losing transparency, and it was slightly deforming like when you look through a lens. He said that other people with a little bit of experience started to notice this anomaly.

At this point he tried to fix in cross position four steel powerful permanent magnets .



With a proper levers system he was able to approach magnet micro metrically. When he was arriving to critical area, magnets began to vibrate violently, moved even closer magnet began to form a blue haze in the air and spread the smell of ozone. Repeating this experiment in big with powerful magnets weighing several tons, one time, due to an accident Ferlini was catch in mist and disappear from view and he claims in the book an in an interview with RAI to have seen somewhere else. In the meantime experiment was continuing and the assistants observed that the fog was spreading dramatically and was switching between all the rainbow colors range. Finally he reappeared at the sight of the astonished assistants. Curiously the

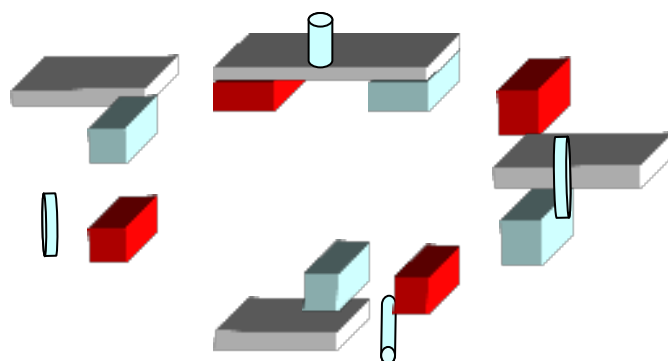
gas mask he had with him disappeared and was not longer found.

About this episode, there is a recorded version, of the interview made from Journalist Pietro Cimatti during a Rai3 program.

I joined a group of people interested to repeat the experiment, but when we have try to contact Ferlini, her wife informed us that he was dead the year before and she was not able to contact the husband assistants . After sometimes a group of people has contacted us saying that they have had the address form Ferlini's widow.

Together with new friends we organized an experiment .

Unable to find steel magnet of large size horseshoe shaped (we had to order them from a specialized companies spending ten millions of pounds) we opted for a simplified variant at a cost of 1.5 million pounds. We bought 8 very powerful magnet in parallelepiped shape



Made with new material compare the one used in 88/89

Then we built the wooden support for being able to control adjustment precision during the experiment. As showed in the drawing, the shape of a horseshoe was approximate, as magnet were only leaning against a soft iron bar and remained there violently attacked by the strong magnetic field, so that to take tame away, we had to use clamps ad powerful levers.

On the other side the system to regulate approaching of the 4 groups was very precise thanks to the use of four micrometers

Unfortunately we didn't obtain any result

Magnet never vibrated , nor produced any phenomenon, most probably the different shape compare the horseshoe, and the composite magnet/iron used compromised the test.

The form used by Ferlini is looking like a steel turning fork, with intrinsic vibration frequencies, probably critical

As for the alerted vision at the magnets centre, we couldn't see anything, however some psychics said to have seen a kind of altered light.

I asked opinion to some colleague that at the Geneva research centre had projected and put in place some huge permanent magnets , that for this reason was considered one of the highest experienced one worldwide in this field.

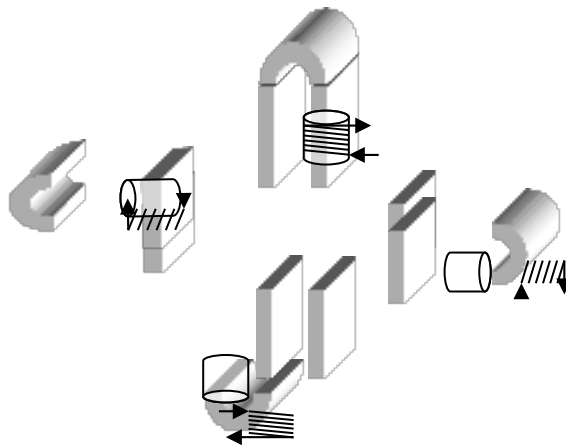
After reading Ferlini's book, the physicist told me that his work had definitely placed permanent magnet in the configuration described in the book. He specified that the placement of giant magnet was so slow sometimes (movement of a few millimetre per hour) that took days to bring together the magnets. They were acting like that to prevent that sudden eddy current, self-in-

ducted by sudden jerks, were altering the characteristics of those expensive magnets. Well in all his experience he had never detected anything unusual.

Despite negative results of research we have to make some consideration:

- All failures had in common the fact that the system could not vibrate
- No wonder then, that the phenomenon has not been detected by the researchers by chance. Certainly, in the implementation of magnet, they were avoiding any vibration of large magnets.
- Magnetic field of magnet is not enough, they require also a rapid movement of the magnet themselves.
- If this were true, we can hypothesize that the phenomenon is generated when the force lines are put into a state where they are chaining alternatively one time yes and one time not
- Perhaps phenomenon could work better with 4 “diapason” shapes iron, turned into magnet placing next to them but not touching a coil of wire, so they are free to vibrate.

There is another point that we have to consider :Human factor. Personally



reading ing Ferlini book I was under the impression that his presence was catalyst. This could be the reason for the stopping of experiments, as they were not repeatable.

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Continuing a new multi-dimensional chemistry ?

We speak now about force field in classical physic way.

I try to express myself in easy terms.

Force lines are used to represent magnitude of magnetic field and like ones.

Let's say that for a given limited area, the quantity of force line that cross It, will show value of field intensity. For example a surface of 1 m² size placed horizontally at Pole will assume to have 100 force line passing through, the same surface placed vertical to the equator, will have let' say 25 force line passing, a much smaller quantity.

In an isolated magnet, force line will enter from one pole side and will exit from other side, forming a circle or an ellipse or anyway a closed line.

If a magnet will approach another one, force line will be effected and distorted, some will try to pass through the other magnet. For each minimum magnet approaches, there will be a certain number of force line spire that just before they were doing a loop in the air, and a moment later they will close the loop through the approaching magnet (parasite energy)

In Ferlini's experiment we have two horseshoe magnet approaching, north against south and south against north attracting each other. If we try to calculate the mutual attraction force, we will found that in dipole, strength increases much more rapidly and travel with the cube of distance instead of square.

So the gradient is very high. This means that when we approach two dipole there is an area in within where attraction force is very high, but it will not take too much (distance) to make this attraction decrease a lot.

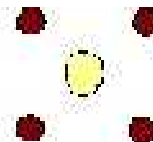
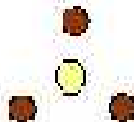
Certainly it was obvious to him and for any layman, that the attraction never goes to zero, but it became negligible

Ferlini noticed at the first, that the vision through that attraction area was altered. From some part of the book it seemed that Ferlini had an extraordinary visual acuity, and he was able to see things that other one were not able to perceive. For example he was talking about a pyramid set on ceramic tile, Ferlini claims to have observed the creation of micro-holes in certain areas, and microscope had confirmed his impression. Ferlini said that later, even other colleagues started to see alteration, but it remained his words without evidence or other documents.

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Crystal lattice and StarGate

I will evaluate only certain type of Stargate, and I will imagine them for simplicity in the plan .



Where:

the **brown balls** are nuclei

"a" is the distance between two nucleus in crystal lattice

Yellow zone is the STARGATE AREA .

The hypothesis is :

When the proton H^+ pass through stargate area, there is the non-zero probability that proton disappear only to reappear elsewhere in the surrounding space. Why this is happening we do not care : this is only a working hypothesis.

We will discuss later, in the third point, about the likelihood of reappearing in one place rather than another, and this will refer to what we have already said treating super affinity.

At this point we can theorize about the model:

1° We expect that the probability of StarGate **phenomenon**, is directly proportional to Stargate **area**

2° in case of same area, two different atoms can generate different probability of phenomenon. There will be a certain relation between nuclear field intensity and phenomenon probability

3° we can expect a relation between vibrating characteristic of crystalline system and possibility for stargate phenomenon to happen.

4° Let's call **"a"** distance between two atoms, there can be a relation between stargate area and **a**

5° for the moment we can identify three structures able to produce StarGate :

Binary

Ternary

Quaternary

In the binary structures we hypothesize a very small star gate area, while in big quaternary structures well we can hypothesize big structures, in particular if they are well balanced

If the above hypothesis are true, then the probability of Star gate phenomenon is directly proportional to :

- the Stargate area of each cell
- Numbers of existing cells
- Protons numbers able to pass through Star gate area in both directions..

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Meanwhile events bring new demonstration

Objection from a reader:

"as long as we are talking about opinion I can accept everything, but at the end only fact count"

Answer: You have to admit that after the last article in blog "22 passi" facts start to be consistent. There **is the picture of a container filled with E-cat**. It is alleged that it worked without input energy for 30 minutes. They speak about steam at 130°. To me those are facts.

There is a functioning cell working since months in Piantelli hands. In shorts, I would say that a container is significant.

Today I bought the digital book posted on "22 passi" entitled "E-cat secrets" : 7 eur well spent. I read it in not time. It has being written from Mario Menichella, a physician form Pisa university and then I finally breathed intelligence and creativity.

I got some precise information on pressure, temperature, type of hydrogen a hypothesis on catalyst. It saved me to do a lot of inutile trying. Gave mi information where to find material.

It is especially clear, the part concerning the three way to verify performance with description of experience

On the other hand is not a theory **but a working hypothesis**.

Of course some may say that you do not easy with assumption, after all "Camillo" until now has demonstrate nothing, a part talking about high-sounding names (this is an educational aspect for me not a wanting to be)

I have always stated that I'm interested in the educational aspect. And I achieve my target if someone has started to get interest in physic. I tried to low down, using few formulas and easy clear elementary concept.

Of course someone will find my way childish, but most of the reader, the transient guest are often curious and needed simple talk.

I have not reproduced FF .. it is not easy but at least we are still trying.

Until now we have proven that just a little nickel powder and hydrogen, are not enough, but you need something else, and this prove that Rossi has had a genial idea !

We could have just waited quietly, but it is daring that you can grow.

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Some rules of thumb

As you may have guessed, this is not a theory but it is reorganization of ideas into a coherent pattern.

We are trying to establish a working model to be able to move. We point out that for the moment the model refers only to the case and nickel-hydrogen-Deuterium Palladium or the case could be another explanation.

Model StarGate implies that a proton going-through a certain area creates the likelihood for inter-dimensional passage.

Proton H^+ can pass through StarGate area both when it enters or when it leaves nickel cell.

We can compare everything to a piston in a pump that inhales and exhales, the StarGate area would be represented by inlet and outlet valves.

But our purpose is NOT to let in or let out a larger gas volume, but simply to make it pass through StarGate area (the valves in the example)

Question is: why gas has to enter inside piston ?

The answer is: because it is sucked from piston movement.

Why it exit as exhaust gas ?

Because it is pushed out.

Any cubic unit cell of equal volume and of any metal is working fine ?

It depends.

Let see why. To start, cell must suck H^+ , and some element will work better than others, at a first sight it seems preferable cell that are "sucking" more. In our case will be cell with element with more affinity to Hydrogen, like : palladium, Nickel, Titanium... This would explain why those elements are favorite in ff. But even for other elements, following our hypothesis, there is a star gate area, if they have a suitable crystal structure.

A problem arise, because if we just make maximum Hydrogen adsorption, the transit of H^+ through StarGate area, will happen one in one way : going in. But then the H^+ will be stuck inside. Instead we should send out this H^+ so to make it re-pass through StarGate area.

So the enormous increase of the “suck” in one side make a clear phenomenon of intense heat at the time of entry, but then blocks the phenomenon (because the H^+ saturate the crystal and the great affinity maintain H^+ inside the crystal)

Perhaps this is why Japanese Yoshiaki Arata could not continue, he was to concentrate in increasing sucking movement, to make it more evident and it has precluded further steps.

Therefore we got following rule:

Too much affinity tend to block phenomenon of FF, creating a too stable situation.

Going back to piston example, once fill it, it has to push out through the StarGate area again. In same way H^+ that entered in Nickel cell shall be push out. Of course if cell is full of H^+ it is easier to make them exit. Therefore:

A convenient but not necessary condition to promote the nickel release is that cells shall be closed to saturation.

How to promote the exit of H^+ , and therefore the passing thorough StarGate area?

To push out H^+ you need to shake cells, and if it is possible shrinking unit cell filled of H^+ .

We have several possibility

- First way is a rapid cooling of cell
- Second could be a rapid compression, and since we work with nickel powder it shall not be made with a mechanic system. It is easier to create a pressure differential of hydrogen gas.
- It is possible to realize pressure by Piezoelectric, with appropriate radiation, supplemented by stationary electric field.
- Another way is a change in magnetic field, by changing “domains” (that are specific micro-groups of magnetic molecules) can perhaps make compressions.
- Using sound waves
- Any other methods

In first Piantelli experiment, it was the rapid decrease in temperature, that was creating a shrinking in cell, that was spitting out a surplus of H^+ , making them passing through Star Gate.

The question is why in the first Piantelli experiment excessive heat was detected mainly during cooling.

The possible explanation could be that the number of H^+ going out seemed greater because the effect was more rapid, it is also possible that the conformation of electric field inside the cell would create a preferential paths that forced H^+ to go right for the StarGate area rather than the surrounding areas.

Before conclusion we need to say something about general mobility of H^+ .

Funnel effect, as in a packed traffic area cars stop, so it **is necessary that H^+ have enough space to move freely once released from the cells.**

Therefore we can conclude in saying that, too stiff crystal structure, where the H^+ going down from one cell have to enter in another one, shall be avoided. It is convenient that nickel grains shall be spongy, with a lot of "tunnel" inside, or alternatively with Crystal areas followed by amorphous areas. Perhaps flat platelets with few molecular layers

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Some theories

Mario Menichella, In his book, said that there have being 150 proposal from different worldwide scientist about FF

Explanation are many time "fantastic" and not canonical, but in quantum physic we are used to everything.

The explanation must solve the **three miracles** problem, :

1) Missing of strong neutrons emissions

2) The mystery of how Coulomb barrier can be penetrated

3) missing of strong gamma ray and x emission

The book speculates as the most creditable theory or hypothesis of Widom-Larsen, according which FF is a not correct name, as it is neither about nuclear fusion of fission process, but it is about "nuclear synthesis" that would occur only in high energy density areas .

This theory has been published in a major scientific journal with peer review . I also recall Celani Hypotheses that propose to apply paradox Fermi-Pasta-Ulam to crystal lattice.

GabriChan (another person from EA) has talk about an innovative spin theory . I am under impression that Widom-Larsen is in agreement with QED message 955 :

"I believe that NI-H system at high load degree, behave **like a liquid in subcritical conditions**. As soon as the condition are right, nucleation starts (increase of crystal lattice numbers), that generates a solid seed crystal.

This analogy came on my mind, because many people have the idea of disturbing reactor with vibrations, magnetic fields, change of pressure. We will have more chance if we can find a reason to star nucleation.

In chemistry if I'm not wrong, **there are two factors blocking nucleation: first is the growth process of a solid that helps to reduce free energy of the system, and the second is the formation of liquid solid-interface ..**

This view need a deeper discussion as it is In the same line of the most acknowledge theory.

It is related with some chemistry aspect that I do not knew well therefore if Qed want to give some clarification it will be helpful.

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And if there wasn't a real catalyst?

Concerning the possible lack of a catalyst, it is possible to assume that Rossi has used the effect detected by Paul and Alexandra Correa.

In that case they used aluminum with a plasma system and they were obtaining (they said) directly electricity.

Fifteen years ago I subscribed to a magazine "endless energy" where the phenomenon was taking for granted, but they also reported that aluminum was consuming and that it needed to replace the vacuum, therefore revenue and costs were in doubt. Anyway the phenomenon seemed to exist.

Concerning the reliability of Correa's spouses I have read:

"one among many other opinions..."

I know Paulo Correa since more than twenty years, he was my student until graduation .. Dr Paulo Correa and his wife Alexandra, two people who have recently done something wonderful..

Arthur A Axelrad

MD PhD FRSc, Professor Emeritus Toronto

Even the Zirconium system proposed by Polish could be included in this speech. I enclose a copy of the magazine.

Further confirmation, the appropriate electrical impulse will encourage the phenomenon, can be found in this article from "22 passi d'amore"

"Brillouin process" from Robert Godes

The process proposed by Brillouin Energy, and developed by Godes in early 90', consists of an electrolytic process based on light water on which Nickel or palladium electrodes are used (but even other transition metal will achieve same result) with peculiar current pulses. According to Godes a current pulse helps electron to be caught from proton close to metal lattice, producing ultra-slow neutron, that will be then absorbed from solution atoms (mainly Hydrogen) forming heavier isotopes and releasing energy. This process reminds the Widom-Larsen theory, but according to Godes does not explain the mechanism of neutrons formation and therefore would not be able to provide guidance on how to get the process started.

Godes process is still at experimental stage waiting for external financing (venture capitalist) will allow industrial scaling. Currently the power produced is one of a few tenths of W, and maximum temperature is next to 100° (boiling water temperature).

Process then would be best used to achieve efficient "heat engines" but could not produce higher temperature, useful for example for electric generation through

Thermodynamic machine (even in case of raising ambient pressure).

At the moment there are no publications, but it seems that positive results have been obtained by replies conducted in laboratories of SRI and LALN (it

seems that it has being observed production of Tritium). It seems that a patent has being established on the technology, but the company is waiting to find founding to continue development activities. The business model is the sales of licenses

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Friday 28 october 2011

E-cat demonstration made in Bologna 6 October 2011 brought some changes. The most important in my opinion is the fact that reactor was not shut down entirely, but that there was a remaining signal sent to the internal of E-cat with a pulsing power of few Watt.

This fact reinforces strongly the idea that catalyst is not the classic chemical catalyst but rather a mixture made from a particular element such as iron and an electric discharge such as the one used by Correa's.

And here there is my last theory on the phenomenon with which I hope to conclude the "attempt of theorizing about FF phenomenon" I started from classical physics through quantum physics and introducing the viewer as a key element that makes the physics more "flexible".

As mentioned in the superaffinity theory, when you work in the very small certain dimension will lose importance while other became relevant.

In practice, it became evident the universe multidimensional aspect. When working with atomic particles we cannot longer speak simply of corpuscles but we have to think about waves.

In this micro world there are not real walls, but there are "hitting section". The atom cannot longer be thought according "Bohr" physical model, but it is seen as a set of waves and fields.

What is the difference ?

We know how solar system is held together, with enormous gravity of the sun that keep tie all the planets .

In Bohr model, the core particle consisting of protons and neutrons was taking sun place. Now if we switch to a vision where core is made of waves things will change ?

In fact we know that protons and neutrons are made of sub particle called quark, which being smaller that protons are considered definitely wave. And a group of wave make another wave.

With the same logic, we can deduce that nucleus and atom are wave.

Obviously I didn't say anything new . Indeed in QM wave behavior is observed in groups of atom as the Fullerene molecules (60 carbon)

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Thinking about atom as a set of waves is a vision closer to essence of reality, but it raises a new question: what is joining the waves that creates atom?

In my mind , I see a pearl necklace, where each sub particle is a wave and corresponds to a pearl. What is the wire that keep pearls connected?

We can find various models type in books, that provide a possible explanation:

- model of modern string theory
- model of radiation that speaks about a carrier wave.
- Geometric model that talks about geometric structures, which create a kind of mold
- Other

Model of string, is much quoted today, describes a reality contained in a giant computer hard disk, where material objects are files. This model is probably the closest to reality, but educationally it is not easily communicable to not experts.

The telecom model is easier to understand why since 100 year man lived with radio transmission. We'll use it then as a parable. In this model the reply to this question: "what keep the pearls connected?" ;answer will be :

"A carrier Wave"

the speech on Carrier wave seems trivial, but if you analyzed it deeply, at a molecular level and the at crystal level, it implies existence of **a carrier wave that sustains all, the whole creation.**

To better understand this idea it can be interesting to look at this site :

http://alfa.magia.it/cicloide.htm#Teoria_delle_Onde_Portanti

What has changed in taking for granted this vision ?

Imagine a carrier wave transmitted from a radio, it contains modulations in amplitude and frequency. Let's think that a single musical note or a small modulation could be a quark, and a set of notes may be an atom.

An atom thus correspond to a particular melody carried by a carrier wave. The novelty lies in the wave carrier.

What characteristic would have assumed the carrier wave ?

Carrier wave should be stable, with a frequency contained within a definite range. This carrier wave must contain, but should not be deeply disturbed by what it contains . In other words the notes may change the carrier wave only within certain limits.

In my opinion the overall carrier wave must be such as to interact with these dimensions it is still out of much as possible in order to carry without being transformed.

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In my opinion, the overall carrier wave must be such as to interact with these dimensions, but it shall keep itself out, as much as possible, so to carry without being transformed.

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I realize that it will not be easy to illustrate my hypothesis.

Let's talk about size

Space has 3 dimensions X, Y, Z these are at 90 degrees from each other.

We are NOT able to imagine a fourth spatial dimension that is at 90° respect the other three known. The problem in Higher Physics is overcome with mathematics, introducing the theory of "matrix vector spaces", in practice we have built new types of algebras to deal with it.

Let's see something practical and understandable in general the idea is this: one dimension is on his own and it is not influenced by what happens in another dimension.

Let's do an examples: geometrically, if an object has $x=7$, it remains so even If the value of Y is changed, the two spatial dimensions are independent one from the other. An object that is obliged to move along one direction (one rail) is not affected by a force perpendicular to it (orthogonal); it is irrelevant as if it belonged to another dimension. However, in practice, dimensions end up in having some interaction with each other, albeit under specific conditions.

Let's consider for example a boat that gets a wind at 90° respect his motion direction. Did she will receive a boost ?Yes! if you will oriented correctly the sail. Of course it is an artifact but it gives you the idea. Most modern theories , like Stephen Hawking, hypothesized 11 dimension for this universe. (it has being found by algebraic work so it is hard to imagine).

The carrier wave may be placed external to our physical dimension .

Therefore Carrier wave is not affected by our action, it carry but it is not carried . But as for the boat, it may be that in appropriate situation, there is the possibility that the objects interact with the dimension of carrier wave.

We now go back to our discussion on cold fusion NI-H. I have already written about the geometric aspect created from crystal lattice, I have hypothesized that there is the creation of a particular Stargate area . Let see the same thing in terms of wave . Nickel has its own wave, like to say its specific note, and so the hydrogen H^+ .All the space in that area will "feel" their musical notes. The two notes however, must remain separate and normally cannot merged.

Those two note are contained inside a carrier wave that shall be always stable.

But what happen if for some chance the carrier wave will flicker ?

If the carrier wave for some reason is destabilized and it is no longer able to maintain strict and well differentiated the "musical notes" played by nickel and hydrogen ? In this case we will have unexpected phenomena of unforeseen coupling, and there will be a new chemical. This might be called "flicker chemical" or "slipping chemistry". What will be in this case Star Gate area?

Going back to the orchestra director who had to harmonize the various sound together, shall he has to stay in any spot or are there some preferential areas? Obviously he shall stay in a position visible from all musician. In fact the players themselves, are choosing the position that allow them to see him.

This is the reason for the arrangement in steps .

Therefore Star gate area is a condensation center of gravity , the point of maximum opportunity for harmonization .

Finally have you ever noticed how your step adapt to the rhythms as we follow a brass band ?

The introduction of another “sound” in star gate can help the transition of all nickel to copper, if the sound introduced is that of copper itself. Therefore the introduction of a suitable electromagnetic wave with an appropriate frequency will facilitate the phenomenon .

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I will speculate now the most contentious and difficult part to accept...

Many people says that I shall not tell things that I cannot demonstrate. I wish to remind that we are in open forum, and I decided to write here because I found it open mind.

Please also remember that the title of the thread is "Trying to theorizing..."

There shall not be restriction "a priori"

Finally I speak for personal experience, It is correct that I act following my experience: why shall I change to adapt myself to other ones idea, denying what I saw?

It would be foolish and extremely inconsistent for my behaviour and it will demonstrate coward.

It is possible that what I am saying is unbelievable today, but tomorrow... who can tell?

Well here is what I believe:

The immaterial carrier wave (for immaterial we mean that it is outside the main physical dimension in which we are used to interact) is strongly stable and incredibly difficult to destabilizing force using material known. It seems immune to any attempts.

But there are some tricks to change it:

- 1) First possibility is close to "known physics", it is a certain energy form combined with electricity. Tesla was the first to realize it. I call it "orgone energy". I will speak about it in another occasion. The easiest way to show it is the electrical discharge. There are other methods based on magnetism or cavitation phenomena etcc.
- 2) There is a "geometrical symbolic" archetype aspect that is able to modulate and to interact with carrier wave. For this hypothesis we shall study deeper crystal structure and music.
- 3) There is the possibility that human being can interact heavily and directly with it. I have spoken about my experiences of "passing paper "phenomenon, (you can see discussion at the forum bound-ary " Esiste l'energia mentale" . This model is the best of the three, in my opinion is the least dangerous, but it needs of a significant individual evolution. However, in case of "strong necessity" even animal or plants are able to access it, see biological transmutation of elements. The miracles are all part of this category. Of those claims I am 100% sure, through my experience. This I saw and this I say. Each person has his own experiences.

Credibility of what I said at this humanity evolution stage is possible only for point 1. In fact people will not believe because they understand, but just because they will be obliged to accept it "de facto"

I published this the 28.11.11 . The day before the experiment behind closed doors that will mark we hope the commercialization of E-cat and inaugurating a new era.

If I am correct, the consequence will be the birth of a new chemical
And .. It is **NOT FUSION!**

They are the first sign of a new vision of the subject. The phenomenon could be called "**shift-chemical**". There will not be only Ni-H melting, but many others. All items will be more or less transmutable.

The process is essentially the following:

- Establishment of an appropriate geometrical aspect using crystallography and nanotechnology
- Destabilization of the carrier wave done spontaneously from the crystal structure will be enhanced by introducing a suitable electrical discharge energy component (at the moment unknown) will increase the effect on small area, I personally find extremely dangerous exacerbate the phenomenon.
- You can enter particular micronized element as doping to induce appropriate wanted transmutations

We will have then new strange reaction with emission of heat, more or less abundant. The heat is a little bit like the exhaust pipe of reaction. There may be gamma rays, sometimes, but they can be also absent. Even other radiation will appear here and there: depending from reagents products.

Finally there is the possibility that the reaction happen with not "waste", without heat, when it is done very precise (fine control), this happen when living things are involved (Kevran's chickens).

I would like to ass two considerations, one Is about what led me to write in this forum, the other are considerations about the dangers of the new discovery .

In 1974 I received a large amount of information on various aspects of existence. My guide teach me deeply about creativity, and he listed a long list of creativity aspects, I still have an old recorded magnetic tape about that.

The aspect that was clarified several times is the concept of "free human will" .Some year later in the late *seventies*; *I got free of charge* in very strange circumstances a book, in which the same concept was admirably summarized. I quote here a paragraph, referred to what we have just say about carrier wave and please bearing in mind the historical period in which this was said :

".. Liberty, for Earth, is deal unfairly and therefore it is illegal. When Justice and efficiency are missing, freedom is not possible. But before talking about any other purpose in human evolution, you must answer the question-test. What is social stability?

"Yeah! I thought about it and I would respond this way: it is the civilization level that gives each individual the freedom to be a being completely disinterested "

"your answer is good enough to continue, but we want to add something. The lack of interest can be called intellectual creativity (independent thinking to improve the others one conditions) and therefore, in addition to freedom , there is also a need of a certain spiritual development (mentality) level.

And now let's talk about cosmic universal ideology "

"what is omnicreativity?"

"and the force that moves the universe"

"we call it God"

"in your own language, we call natural laws. Your concept of God is too static, rigid thinking and make static the creative human being thinking, it is a contrast symbol, full of tradition, therefore not helpful in your era. The concept of natural law is dynamic, and stimulates human creativity. No one has difficulty in adding newly discovered laws of nature to the one acknowledge, even if they can raise conflicts with the religious traditions. And for this reason that we have another word that comes from "omnipotent" , that means creativity present all over, from this omnicreativity.

It is the universal means of the intangible radiation fields that rules universe.

We will try to clarify this concept...

"We will explain in few words what is the matter in relation to the omnicreativity cosmic force. The matter has mass (weight) energy inglobate, it is a transformation of intangible (without weight) of the cosmic radiation field. Transformation happens under the action of an enormous force field that create physical law that create rules that govern all the matter. This field is known as "field carrier" .Think back to a radio transmitter. Omnicreativity send a field carrier that keep atoms once created and create laws of matter and inertia that rules universe.

So in an area where there is not carrier field there are not atoms ?

It is like that! In that space there are not law of matter and inertia, therefore an atom split apart, but in the same time the circumstances for which mass-energy can exist as a transformational form will disappear . Therefore there will be a return of intangible energy in the cosmic carrier. The atom would disappear without a trace"

"How can you know for sure all these things?"

"We can master the technique .."

"Then you shall also know God"

"No . We only know what is omnicreativity. We can only demonstrate her existence, but we can also use it in our technical" "therefore you think that this world is controlled only from a system of natural law, without an intelligent guide" "No, on the contrary! Genetic process of conservation of this world is controlled from an immeasurable intelligence. Let's go back to the transmitter idea, even if a material cooperation is not the best.

Cosmic carrier field it is the carrier wave (basic frequency) that keep matter and insure the natural order of things. Precisely as in radio, carrier wave is used to transmit creative impulse, thinking and sentiment (world and music). Intelligence and love come to this world as immaterial irradiation according to our terminology such as modulation of the cosmic carrier field.

The intelligence of the universe is infinite. Your scientists are able to describe many natural creations and general natural ordering, so you can fill many books. But among the various natural creations there is one the overshadows all others.

Ant the brain of an intelligent being. The only recording capabilities reveals a small world of microtechnology. That such a small volume of chemicals

can contain millions of recordings and play them right away is unimaginable, unimaginable as it is the extension of the cosmos. And this is just the beginning. Human intelligence is in a position to manipulate the available mutation and by inference and synthesis selectively add to the existing ones new mutation. Can think logically

In our ideology we make a clear distinction between the material and immaterial part of human existence. The logical thinking, memory and consciousness are material aspect. They are related to matter and doesn't positioned man above beast".

At this point i observed

"I believe however, that intelligence and the ability to distinguish between good and evil make man a rational being. Is in it this the reason that gives man right to exist?"

"No, Stef this Is the problem crux. We have started this conversation only thanks the fact that you know the computers technique, and we hope to clarify ideas.

Reason does not give to man any right to existence. Why should it? You know that it is possible to make a computer to think logically. He can manipulate mutation of memory available and just like man add selectively through deduction and synthesis, new mutation, it can reply to question even with Right and wrong, and the awareness that you gave it is called program. Therefore we can say positively, that intelligence memory and consciousness are material things, and reason does not give man any spiritual value.

"but man has conscience and natural awareness of good and evil"

"No! Definitely not! A couple of hours ago, you realized that on Earth what some people consider white for other people is black. We have discussed about this till now. Paradoxically there are men, who in name of a supreme being or to gain eternity, kill other people. An objective educational surround make us aware, and we are interesting in changing your awareness. Like expert computer programmer, we would like to change your program, and this is possible because it is a material process."

"But does man have soul?"

"we cannot speak about soul, we can only speak about immaterial human existence, therefore the capacity for disinterested creativity.

We start again from our computer, which is able to formulate logical thoughts (concretely!) It can be quite complex, so at a certain point it is able of building mental formulas, useful for the technical and scientific development. But it cannot go further, that one is the ultimate limit of development for a computer regardless of whether it is electrochemical, or how many year of technological development it represent. The reason I that a mental material, by definition, can think only materially. Intelligence is only material creativity.

Now, how is it possible that material human brain, with his mental process and thus chemical materials, is capable of immaterial creativity?

If selfishness is the characteristic of the material world, the lack of interest, which is the opposite concept, can be a solution of the problem. Any form of material life fighting for their lives according to the evolution laws are selfish. What then, the natural phenomenon that occurs in the mind of man who thinks selflessly?

Human brain is structured so brilliant that can fulfill a third function, It is a

super-receiver apparatus which can receive the modulation of the cosmic field carrier immaterial. The Thought of selfless good will is of purely immaterial, direct contact between the material creative phenomenon and omnireativity.

The voice was silent and left me rapt before imposing cosmic panorama couldn't refrain from asking. Human brain is structured so brilliant that can fulfill a third function; it is an apparatus super receiver which can receive the immaterial cosmic field carrier modulation. The selfless good will thought is purely immaterial, is a direct contact between omnireativity and material creative phenomenon.

The voice became silent, and left me rapt before the imposing cosmic panorama. I could not refrain from asking:

"If the omnireativity manifests itself so directly in our lives, then from where it comes all the misery on Earth? Why he created a man with a natural ability to attack their own kind and to design nuclear weapons, or annihilation? Why he doesn't help us?

"You are asking the same question that the current generation has posed about separation between Christianity and atheism. The answer is: because man must be free.

Only in complete freedom is able to think unselfishly. He can Sacrifice not for blind faith or natural instinct, but for a spiritual disposition (mental level) expressed in friendship, love and admiration, in good willing, compassion or other form of social movement. This link between material and immaterial give man the right to existence as ultimate matter creative.

And why they should be free. Imagine the situation of a child who spontaneously throw his arms around the neck of the mother and say, "You are the dearest mother in the world". If this happens as a disinterested stimulus, with no other reason, his would be the intellectual creativity. But suppose that child say these words prompted by others or by a second end. Do you think that this child love declaration has value for the mother?"

"evidently not, It is not true"

"Then what is the assumption on this kind of creativity?"

"The child has to act completely independently without ulterior reasons"

In fact the conclusion is that only when the child is free and acts unselfishly, we can speak of an intangible activity. A man that is not free is not in condition to reach high level and has right only to exist as a material creation.

An intelligent race that is guided by God's hand through life in unthinkable.

We would be a marionette theater, fully guided, with no perceptible dissonance. If man could not be disinterested and would have no right to exist, would also be unhappy because of such a world would be always the same, without creation.

Denaerde Stefan is the author of the book "I met the extraterrestrials" published in 1969 In Netherlands, has reached more than eleven editions and was read by more than forty million people worldwide. The protagonist of this unsettling experience (the real name was kept hide, using the pseudonymus of Stefan Denaerde) lived in Netherland during '60. He is a mechanic engineer, owner of several business that operated in international trade. This man didn't have, at the time of contact, any interest in the "extraterrestrial and ufo's" topic, neither believed in phenomena linked to them. During the contact made with these Beings from "Iarga Planet" he learned important information

regarding the true history of our planet, cosmic revelations about the meaning of life and destiny, and warning about the future of humanity .

Many things said in the book found the following confirmations:

-they speak about high temperature superconducting with ceramic appearance (against all logic because the ceramics are insulators).

Well in 1990 were in fact discovered substances superconducting ceramics

-It predicted that money will be gradually replaced by computer unit and disappears (in 60' there were no computers!)

-discuss about problem of recycling so unthinkable for that time. The problem didn't exist then

-in 2005 I saw a documentary which indicated the possibility of building floating bridges for the train similar to the one described in the book

-High speed rail and magnetic levitation are beginning to be taken into account and the speed correspond to what is predicted

-mapping DNA modification and the problems of species are becoming current.. but then...

-the way to heal sickness using a mixture of electricity and drugs began to start..

-The emerging rules is do what nature does just shorten time, it looks universally valid

The rules of triangle Justice Freedom Efficiency it is always useful.

To who is interested to deepen this issue please visit the site

UFO Contact From Planet Iarga

Is in english , but is easy to understood the meaning, even using normal automatic translator.

I believe that the era is about to be inaugurated and E-cat Rossi will lead the way, must necessarily taken account of that kind of philosophy because of great benefit to us all.

Now the problem is to improve people 's consciences, and the rest will be solved much of the cornucopia E-cat.

It is not easy to accept the existence of E-cat, Is like saying that Santa Claus exists.. it is not enough to see it or receive gifts, but we want to pull his beard to see if its fake.

46 Possible perspective on FF

written January 2011 after first public demonstration

In my opinion we are just entered in a new historical era. I will call this new age "solidarity age". Maybe ia am a visionary, but we will see.

Despite the strong selfishness, man is not as bad as it sometimes seems, if you consider a set of 100 people, 99 are honest but this is not what you see, the villains is the one in the newspaper.

Money and energy are almost synonymous.

Now cold fusion is like an incredible cornucopia that produce money. There's something for everyone.

The aim will be to spread wellness

Human being will be call to do that.

Individually, man can do little but there are macro-structures created by him, that acting big.

We can summarize 3 type of macrostructures:

1) government system

2) bank industry and economy

3) religion and trade union system

How these structures will react towards the revolution create from cold fusion technology ?

Each one will have advantage and disadvantage in diffrent way.

1) government system

Government will have to ensure stability, it must sail people to the transit- ing from one era to another without creating dangerous trauma. **At the beginning, the rulers will be clueless, because they will not have the support from scientist. Phenomenon in fact is out of their acknowledge. There will not be a position, things will be easily ignored with the typical "if they are rose they will bloom" . I would say that this is already happening.**

The rulers dilemma will appear later, and it will be caused from the fact that most of the income from state cash is coming from energy taxation. Government will not be able to lose this income and therefore it will try to move the taxation on the new energy source.

This should not be seen in a negative way, but as the minimum damage for the moment, but as the acknowledge will enter in world, things will change and there will be a new balance social order that will create stability

2) **banking industry and economy**

some companies will draw advantage immediately, while other structures such as ENI ENEL will be slightly surprised. But not as much as one might think, in fact it is not enough to have energy, you still have to distribute. The distribution will always be there.

Use the oil to burn it was a waste indescribable: oil is a source of key raw materials and it is better keep it for this purpose.

The gains of the industry will move from one place to another but there will be gain.

Electric cars will receive a great boost , at on this issue it is arriving technology based on EESstor capacitors.

Even the Nègre car working with air- compressed will work well with cold fusion technology

There will be a market conversion, with a lot of work. I would say that , after all the industry will gain and will probably be the driving force, not only for green peoples, but even for profit enterprise.

More problematic will be the bank situation. The money concept is based on the equation :

money = goods produced (GDP)

Now the goods produced depend greatly from available energy following this equation

Goods produced (PIL) = (available energy)+(manpower available)

If you increase energy available , you increase the goods produced and thus the money. This mechanism is not really an advantage for the bank that agree earning big money from shortage of money, with the loans industry.

To understand this consider the ancient civilization that used cocoa beans as currency. Imagine that someone who comes from the future with tractors another , is able to produce so many seeds that everyone can have it in abundance: it is clear that value of cocoa beans as money goes to zero

Bankers are very powerful and they have in their hands many media, they will definitely try to control or influence it.

Through print, TV Could peddle rumors about the dangers of this new energy source. Inject a fear in human is very easy . Edison was in competition with Tesla. Tesla proposed neon lamps, much more energetically favorable, Edison spread the rumors that neon light was hurting eyes. Edison was so successful, the new spread around the world, and even today some believe it. We had to adopt a European law to eliminate wasteful bulbs.

Therefore it will be easier to spread a rumor like this:

"cold fusion, is useful yes, but what hidden dangers will bring? Are you sure that it is not radioactive , be caution" In doubt it is better to stay with the old gas boiler.. "

Then they can let you find four dead cuts near the reactor and thing is done. The government intervened to "protect public health". It will act for

out good wellness, i twill declare that reactor must be manage by state (that very often are controlled by banks)

So you will have an incredible paradox in the first phase, lasting 20 years , cold fusion has being neglected because there were not radiation, (that is the classic demonstration of nuclear fusion) and in the second phase cannot be used freely because there is "suspicion" of radiation (if they do not exist they will be invented) therefore radiation at call!

Fortunately reactor is so simple that can be built without special ranger at home. It consist of a cooled tube, containing a secret (for the moment) magic powder , you push into the tube hydrogen produced from water.

Could you stop phenomenon? Will be like at the time of prohibition when all went well for distilled wine, and there never been so much alcohol around.

EXTERNAL INTERVENTION user QED (economic considerations)

"... I would like to say my opinion on the subject discussed few days ago concerning the relationship between science and magic.

Just for fun I would like to quote Arthur J Clarke, we can certainly define far-sight more than visionary, at least regarding artificial satellites.

"any sufficiently advanced technology is indistinguishable from magic"

A part from citation, I would like to recall that what we call science today, is the result of the selection mainly for economic reason of discoveries and observation made in recent centuries.

We left behind some practical experience which, although functional, does not have an explanation in academic theory.

Each theory is the mathematical representation of a natural event, and as each performance is also approximate, and adaptation to make I palatable and understandable to the public.

Some branches of scientific research in the past, have being left to fade, because economic resource went to other branches. perhaps less interesting, but certainly more lucrative, and often more controllable by investors.

The Faraday homopolar generator has worked very well to produce DC in place for electroplating, until it was supplanted by systems with greater efficiency. But at the time and a century has passed no one has a valid theory to explain the operation of this generator..

A posthumous more detailed investigation in these branches would not doubt the upheaval of the existing theories.

The heliocentric theory, refuting the geocentric theory has not prevented the possibility to calculate and foresee the position of celestial bodies observed following old theories simply made them less approximate.

However, Galileo was imprisoned and exiled for his conviction. He was considered a madman and a heretic. Einstein, when he developed his famous relativity theory, has not invalidated the theories of classical physics, has simply made less approximated by adding a factor in calculation speed and valid only for masses much higher than those observed previously

In summary, my opinion is that any excessive rigid attitude against new idea,

is negative at least as much as an overly imaginative one

For what it's worth, even if I rely in the rules that anything man can imagine, man can built, it is undeniable fact that some very far-sighted vision of visionary men can only be achieved when time is ripe, and sometime this takes year and century for maturity.

Concerning the effect that cold fusion technology can have on society (I assume it works because I like to believe, but also because I have investigate around academic world) .. I believe that the future has not yet been written.

I have to agree with Camillo, availability of energy can produce a new gold era, where finally noon will abused other one to live. But I am also aware that one per cent of exploiters can do much damage to the remaining 99. The most likely hypothesis that the government will decides on taxes and restriction on energy production, could be the reason why people decide to rebel and take possession of something that is his by law

I am afraid that the first step, unfortunately is precisely the indiscriminate increase in cost of materials needs for the reactors construction. The economic estimates of Rossi and Focardi use based on current cost of nickel. Fortunately it appears that the reactor might work with other materials, albeit with lower yields.

What I want to emphasize is that the proprieties of energy drawn from the reactor is still unknown. Who can declare itself as the owner? Who can reasonably declare right to deal with energy taken?

We do not yet know where it comes from for the moment..

But it seems to arrive from vacuum, it seems like the air we breathe al over, that no government would ever dream of burdening taxes without risking to become roses fertilizer from citizen hands.

47 THE DANGER

A coin has two sides.

If I 'm right, this "cold fusion" is a phenomenon more akin to chemistry, that it is obtained cheating elements. We are able to destabilize "carrier wave" that sustains reality. Imagine a huge net that supports all material objects.

We are going to change the net size, or if you prefer we touch and shake the net. Doing that we slightly destabilize temporarily physical law in the area where the net is vibrating.

Let's do it for warmth, or to obtain new rare elements transmuting simple and abundant elements.

Phenomenon reminds the modern method of harvesting. There is a car that grabs olive tree and shaker to vibrate more or less violently.

But beware! If the vibration is light the tree can bear it, if you overdo the tree will die.

This latter aspect would lead the comparison next to the old pinball game, it was possible to shake a little bit, but too much was putting the pinball in "tilt"

It is acceptable to modify a little bit the branch on which we are sited, but cut it completely is stupid!

If man will be push from his greedy attitude, I twill risk in the future to break the "net" that is holding him. At first there will be many small holes, and no one will be able to appreciate them, and man will be deceived, because small little holes here and there will be supported for years.

But on earth we are a lot. Many small holes at the end will provoke a big tear!

In the long run I twill rip the net but only if mankind has not learned the lesson of nature. **If you break the "support net", everything that seemed stable will be destabilized in an unthinkable way, and we will have a huge natural disaster (Atlantis?)**

Certainly at this time the E-cat is safe. For now and futures years we will only appreciate the positive fruits. (Beside the strong destabilization of social-economic system)

Currently the way to operate the e-cat is looks like when someone shakes olive tree to make olives fall.

So no danger! For the next few decades, let's enjoy!

The problem will come later with the inventing of amazing devices, capable of vaporizing material (unfortunately, there are already first sign)

48 future technical prospecting

What shall we do?

The temptation will be to produce everything with the new source, without worrying about waste. This is stupid ...stupid...stupid.

Nature is efficient and economical, it does not waste anything, even recycles everything. It harmonize as much as possible, the refusal dismissed from one is the food for another one.

Of course we cannot start immediately in perfect way, but we shall try to use our old experience to avoid passed mistakes.

We start eliminating nuclear power plants, actually we transform them using E-cat. Then we will dismiss the fossil power plants.

Instead we keep the hydroelectric plants, because we can use them as a driving force, to accumulate surplus energetic during night, and as water reservoirs to have constant water in river.

I will propose to strengthen and build dams appropriate especially in drought area. We have to think the territory as a body that must be sprinkled with blood. We create a powerful set of channels. This will stabilize the climate

The temptation will be to produce fresh water instead of seawater de-salting with E-Cat technology, but this, however, perhaps only for some areas and only temporarily.

Nature de-salt spontaneously, at the poles, each winter a huge amount of fresh water as ice is produced from the sea, we can enhance this phenomenon. I see in my imagination immense canals that descend from the pole to the equator, bringing fresh water and harmonically balancing the temperature

As for solar panels I'd say that for the moment should not be abandoned. Of course, their cost are enormous compared to the E-cat but they have an educational purpose for humans.

I remember that the main goal now is INNER GROWTH OF THE INDIVIDUAL.

The transition from "grabbing more than I can" unselfish attitude to "first I look after other's one needs" is crucial, vital and indispensable.

Keep photovoltaic panels on the house's roof, is the best thing for the moment, although they will cost a little, and in the long run they will be not convenient. On the other hand they are harmonic, follow the course of nature that works harvesting energy from sun. Even for wind generator is the same. They must be maintained and enhanced where there is wind. I remember that you should always diversify energy source. In addition we need a flywheel that cushion ups and down of electricity.

The network of high voltage electric wires will decrease a lot because with E-cat electric and thermal energy will be produced locally, as this technology is very suitable for cogeneration.

Therefore each district will have his E-cat and we will have a transport of electricity at low voltage and everything will be easily screened and bury.

In my fantasy I see that under streets will be created deep cave where there will be water pipe of supersaturated steam, well insulated so as not to disperse

heat. Then there will be shielded electric cables. Together there will be drinking water pipes and sewer places so not to interact and put in security, to avoid accident. Many pipes will be two-fold because there will always be a reserve in case of breakage. So maintenance will not mean break streets, it will be cheaper, but the concept of cost will change with e-cat. And labor is not missing.

Transport will be orientated towards green business methods, high-speed train are the future. From this point of view the challenge of so-called environmentalist "no TAV" is completely incomprehensible to me. I see so much egoism exchanged as act for territory defence.

The car cannot be stopped immediately, so for some time we may have hybrid cars. I see a very well marriage between the technology of cold fusion and the compressed air (the mysterious Aeolus) by Guy Negre, who, despite having been approved throughout Europe, is not seen in circulation. Perhaps because this engine tends to create ice, it tends to block suddenly. The solution is to increase air temperature of exhaust air, but doing like that the autonomy of the car will decrease exponentially.

Guy Nègre himself, who is tied to TATA (India) company, said it would need a hybrid system with a heater to prevent ice formation. Guy has reiterated that, heating with gasoline or GPL. air compress during decompression phase, autonomy will increase to 1000 km. But this hybrid version announced from Tata has not been put on sale. If all this were true, E-cat would be ideal as it is a not polluting system and it will increase the autonomy to unthinkable values.

Unfortunately in this history there are still too many mysteries: is it possible that the technology is stopped intentionally from external factors that pay to avoid that such new stuff will ruin the market?

I think that with cars we will have several alternative solutions; beside the hybrid cat-air compressed, there will be possible to have several different other solutions, all electric orientated as the cost of kWh will be lowered down from E-cat

The most promising and incredible battery is the one proposed from Texas company EESore, in combination with Canadian Zenn Motors.

Since years they claim to have the possibility to sell a battery based on multilayer micrometer accumulator with energy up to 5 times faster than current lead-acid battery and charging cycles without that the next charge will be lower than previous one. And finally the much lower cost from USD 15.000 to USD 3.000. The problem seems to be on the insulation I control material based on barium titanate. If it is not well standardized, short-circuit may create short-circuit and explode.

However premises are there, and I am convinced that time will lead to optimal solutions. There will also be people who will use steam of E-cat as heater. Boats will be the first one to use it as they will substitute diesel with steam turbines. Marine transportation will become extremely profitable.

The problem will remain on planes, and even if it is less evident on trucks, bus tractor.

The symbol of the new era :



I remember that **the sphere is the most efficient geometric** solid, it achieve the maximum volume with minimal surface enclosing.

The three values of freedom efficiency justice must be balanced

Imagine a three legged table, where the plan must be kept horizontal. The three legs must be the same length.

The game consists of three to stretch the legs while maintaining balance