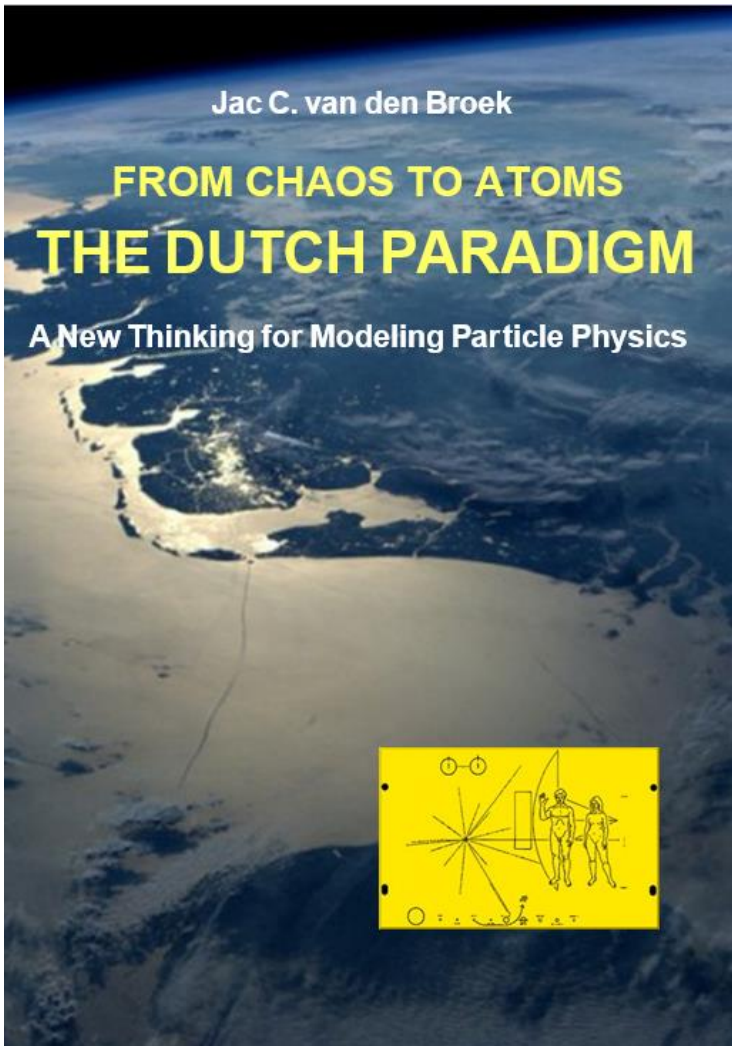


The Dutch Paradigm



Jac C. van den Broek

From Chaos to Atoms

The Dutch Paradigm

A New Thinking for Modeling Particle Physics

Stichting The Dutch Paradigm

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1. INTRODUCTION

I have pleasure in presenting this third book in the series of The Dutch Paradigm, which is to share my deeper insights into the true nature of particle physics based on a distinct novel way of modeling the atom and its constituent items.



Particle physics is fascinating as it aims to unravel the root cause of the physical world we encounter. Despite thorough experimental studies, it has not been possible hitherto to explain what we observe in the world of the smallest particles in a comprehensive and transferable way. It is as if with every new discovery, we become more embuzzled. We hear evermore reports of there being new elementary and virtual particles, which has prompted the need for increased use of elusive renormalization techniques. Yet, we still do not understand the true nature of mass, gravity, dark matter, and neither have we found a unified source for the declared four fundamental forces in the universe.

This book unlocks these as yet unresolved mysteries of the universe, starting from the principal postulate in my first book stating that all

scientific observations in the physical world are reflections of the electromagnetic systems of just photons and neutrinos only. Further, through mutual interference at gamma frequency, the electromagnetic systems of these two entities can form the construct electron.

In turn electrons can attract each other to form spatial constructs in the geometrical symmetry of a dodecahedron. Two dodecahedrons can bond together to form the neutron, and through β -decay, the proton, ultimately creating the nuclei of all atoms through clustering.

In this book, I further explain, validated by metric calculations, the phenomenon of mass as being the endogenous effect of mutual interference between electromagnetic systems of entities. Beyond that, I also explain how I came to identify the root cause of quantum physics and dark matter and describe the first principle of the perfect imperfection. All this forms yet another set of astounding findings based on objectified observations.

In my quest to unravel the intricacies of the universe, I did not encounter unsurpassable roadblocks other than connecting to peer groups who share the same interest in thinking beyond established paradigms in particle physics.

I have disseminated my findings and conclusions to leading physicists on particle physics in the Netherlands and abroad. Hitherto, the particle physics community seems impervious to my attempts to arouse their interest in my distinct insights into the fundamental structure of matter arising from my novel way of modeling Particle Physics that, in my humble opinion, represents a fundamental breakthrough in particle physics. Nonetheless, I am hopeful that my third book in this series on the subject matter will entice a faithful debate in the particle physics community beyond established paradigms, ultimately resulting in their recognition of the

significance of The Dutch Paradigm as a new way of thinking of modeling Particle Physics.

Jac van den Broek

2. THE MESMERIZING FUNCTIONALITY OF THE NUCLEUS

The Dutch Paradigm strives to model the electromagnetic manifestations of entities in particle physics. Whilst these electromagnetic manifestations are potentially perceptible by the human being, a clear distinction shall be made between the monistic nature of these physical manifestations and the much farther reaching interpretation of the same as images by the dual nature of the human being.

As human beings, we live in a world of tangible sensory illusions. The Dutch Paradigm postulates that the appearances of these illusions are reflections over time of the behavior of free electrical quants in physical space of only two distinct types of entities i.e. the photon and the neutrino as known in the Standard Model of Elementary Particles.

At the onset of the Big Bang, the free electrical quants of these two distinct entities got released at gamma frequency each with an energy content of **hf** . Accordingly, their respective electromagnetic manifestations had a refresh rate of **5.10^{44} per second**.

In between one Planck time (**5.10^{-44} sec**) and the next, these free electric quants step move over a distance of **1.6×10^{-35} m**. The step move of one Planck length in one Planck time represents the speed of light.

The human vision system compounds the step movements into an image at a frame rate of up to 60 frames per second. Thus we actually observe a compounded image of successive step movements of the free electric quant of photons and neutrinos during approximately 1/60 of a second. Such compounded images can be registered as sharp images by the human eye only if, and to the extent that the frequency of such free electrical quants is within the 10^{14} Hz frequency range.

In these sharp images, we perceive shapes that are geometrical and mathematical reconstructions over a timeline. We can explore the causality within such images through our thinking process. Therefore, one might say that we live in a world of illusions in which sensory information is compounded into sharp images.

This raises the question of whether we are able to observe electrons and dodecahedrons directly into sharp images.

The answer is no; it is practically not feasible. We shape the images in our thinking through imagination, and this is particularly the case in how we perceive visual information of the subatomic world.

The Dutch Paradigm proclaims that electrons formed through mutual interference between the free electric quant of a gamma-photon and a gamma-neutrino. Electron pairs may attract each other and form spatial constructs in the symmetry of a dodecahedron, accommodating one electron on each of the twelve dodecahedron faces. Two such dodecahedrons may bond together to create the neutron, and - through β -decay - the proton, ultimately forming the nuclei of all atoms through clustering. As such, a nucleus can be imagined as a composite geometric shape comprising multiple dodecahedrons.

Man cannot directly visually observe the dodecahedrons.

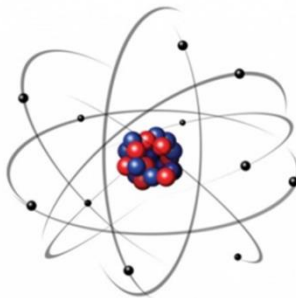


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Virtually all nuclei present in our earthly habitat are contained in the center of their atom, whereby free electrons arrange themselves in orbital patterns around the nucleus.

The atom presents itself in our thinking as a kind of an enclosed sphere around the nucleus. But still, it is hard to describe an image of the atomic structure correctly.

A workable concept is the model of the atom described by Niels Bohr over 100 years ago:



This graphical representation is easy to understand as it fits our scope of thinking. It is like a kind of an exploded view.

It shows an open structure and suggests that we can see the nucleus, which we cannot.

We project the constituent parts of the atom relative to one another in an incorrect way in terms of their relative dimensional ratios. We assume all constituents form a kind of a marble, which is wrong. We project the orbits of the electrons as circles, which is incorrect as well.

Why do we accept an unrealistic graphical representation of the atom?

The answer is rather complex: the atom is for the human being a compounded image of the spatial presence of the electric quanta embedded therein over some 10^{43} **Planck times**. It is, in fact, an image of a tangible illusion.

Human intervention roots in the way we perceive images. Our perception of the structure of atoms in our thinking is that of a peripheral steady 'fixed' form, i.e., an enclosed sphere, a tiny ball. Such a tiny ball has in our imagination due to its tangibility, measurable properties. Objects consist of countless atoms. Eventually, atoms allow us to recognize tangible objects, gases, and liquids; we understand how atoms form solid objects and know that we can modify such an object at will.

Thinking about modifying objects begins as an abstract process. Let's assume that we wish to modify the shape of an existing object. We experience the tangibility of the peripheral surface of the objects. We

can apply hammering force, cutting, melting, and freezing whatever we want until we are satisfied with the new perceived reality. The tangibility makes it impossible to invade objects at an atomic level.

Particle scientists will explain that we cannot break the outer shell of atoms due to the 'Pauli Exclusion Principle'. For us, the idea that an atom presents itself as a massive but tiny ball is rather satisfactory for our understanding of the material world. We do not live by the idea that we are modifying tangible illusions when we hammer, cut, melt and freeze these objects made of tiny balls.

We were trained by education that there is 'mass' within each atom, in each tiny ball.

But the tiny ball is almost empty

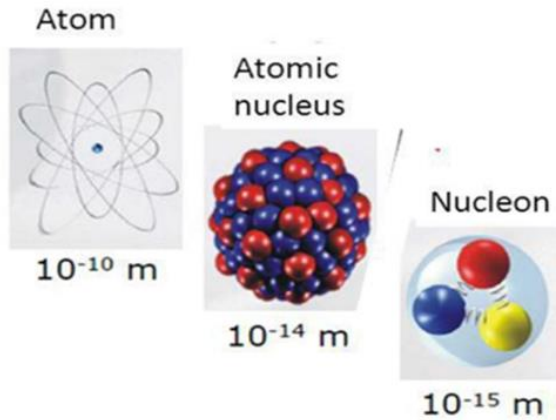
Based on observations, the particle scientists concluded that an atom is a confined, almost empty space with one or more fast-moving tiny electrons as the guardians against invasion by another electron.

It is a confined, empty space with only a tiny nucleus in the center.

For our understanding, it is then an almost inconceivable conclusion that we cannot find within the tiny ball 'matter with mass properties'. Our objects made out of atoms are only tangible illusions triggered by the properties of fast-moving electric quanta of entities in empty space.

Still, we use the 'factual' dimensions of the atoms and the nuclei based on our human understanding of the images. We respect and appreciate the tangibility of the illusions and can validate the measurements of these illusions.

These dimensions are:



When we plot this scaled in the Bohr illustration with the nucleus in 0,01 m, electrons orbit at a diameter of 100 meters.

The finding that an atom is merely confined empty space with a small nucleus was undoubtedly not what Isaac Newton had in mind for the substance of an atom when he defined mass and stated his laws of motion of an object with mass.



by Fritz Ahlert

We are now familiar with the scientific notion that there is only a tiny nucleus in the atomic confined space only. We also scientifically accept that such a minuscule nucleus triggers the specific properties of the respective elements of the Periodic Table of Elements. Therefore, the mass of an atom is linked to this tiny nucleus.

But the nucleus is also a tangible illusion!

We cherish the hope that eventually, we will unravel the secrets of the tangible illusion that presents itself to us through the image of a nucleus.

Remarkably, the nuclei are spatially isolated in our cosmic cold earthly habitat by electron shells. The nuclei are part of a communication system with all our sensory systems to trigger impressions via the electrons in the outer shell. The electrons in the outer shell are thereby also responsible for the bonding behavior of the atoms.

How does this work?

What is the role of the nuclei to provide these sensory impressions and via transfer by the electrons?

As humans, we can move ‘physically’ through gases and liquids, but not through solids and certainly not through electron shells.

Effects of gravity, color, taste, heat conductivity, resistance to deformation, and physical and chemical properties are linked to the nucleus of the particular atom. What we experience from the nucleus of the atoms are derived experiences transferred via electrons in the outer shell.

All this is, in fact, rather strange.

The Dutch Paradigm introduced the dodecahedron and subsequently the double dodecahedron as the building blocks of the nucleus. The shielding of the bare nuclei into the atomic structure seems a less spectacular addition. It is more in particular shielding of that nucleus from ‘the outside world’. It is as if this is an almost inevitable outcome as ample space is available for the impact of the nucleus to expand within the physical space during the process of becoming an atom whilst starting to manifest itself in several ways towards the world outside its atomic perimeter.

This may be true, but the addition of electrons also creates the possibility of exchanging information to and from the nucleus, resulting from interferences with other atomic objects. This is in short described in the first book, *The Dutch Paradigm*, chapters 41 and 43.

So far, *The Dutch Paradigm* attributes only a few atomic properties to the nucleus. It is especially true for the electric behavior and the effect of gravity, but again, we certainly cannot find the mass of Newton.

In any event, it does not yet seem to have been fully accepted in the particle physics community that a nucleus of an atom is, without a doubt, not a tiny ball with traces of matter.

We know a lot about the transition phenomena in the atomic environment. Mainstream science is very familiar with the behavior of electrons in the outer shell.

But, clearly, regular science is thereby adopting a flawed image of the electron as a point particle.

The Dutch Paradigm recognizes the electron as the central construct in building the nucleus as well.

The electron is a construct, not an elementary point particle.

Macrocosmically, this misrepresentation of the electron per regular particle physics has not presented any real impediments to the technical applications based on empirically obtained know-how of atomic behavior.

So, why care about subatomic knowledge?

Because we are curious, and we want to understand the world in which we live, the world behind the tangible illusions and forms.

The mesmerizing functionality of the nucleus triggers curiosity. There is so much more to discover in what the dodecahedrons represent.

I will focus in the following chapters on why it is reasonable to assume that dodecahedrons were formed in the early stage of development of the physical universe.

It is intentional and follows a path in which chaos and self-assembly works in tandem.

3. UNITY IN DIVERSITY

The Dutch Paradigm identifies two types of entities, i.e. the photon and the neutrino, which is in sharp contrast with the Standard Model. These entities manifest themselves after the Big Bang as 'unity in diversity'. The electromagnetic manifestations of their free electric quants are discernible in physical space. We can reconstruct their respective historical path in a time-lapse.

The compounded historical paths become recognizable by humans in thinking as an image.

We find that the compounded manifestations of these free electric quants also exhibit causal and measurable characteristics, commonly known as mass, electric and magnetic activity, and spin. In the regular paradigm, the properties are designated to a range of particles, all as included in the Standard Model of Elementary Particles.

The Dutch Paradigm demonstrates that the various electromagnetic manifestations are mistakenly identified as elementary particles themselves. The manifestations are only the physically notable effects of the two types of entities.

I previously made the analogy to footsteps in the sand.



The current paradigm assumes that the properties of the elementary particles of the Standard Model are nature constants by definition.

In deviation thereof, regular science classifies any stable particle that exhibits other values of these properties than captioned in the Standard Model as an unknown newly identified elementary particle. Accordingly, new families of electrons, neutrinos, and later quarks and the Higgs boson continue to enter the Standard Model.

The compounded image of the physical historic path of the electromagnetic manifestations of the photons exhibits unmistakably a wave character. Thereby, such waves can assume a wide spectrum of electromagnetic frequencies. What is the significance of this wave character? Is this a cause or an effect of manifestations of an elementary particle?

The issue flagged up in science whether an elementary particle could also be a wave. Waves require a spatial extension. Can this be delivered when an elementary point particle agitates a field? Is a photon a particle or a wave, or both?

A metaphor is like playing a stringed instrument.



Particle physicists reluctantly allowed modifying ‘certainties’ to fit observations within the assumed set of theories.

Yet, these certainties are still the beacons on which the overview of the Standard Model anchors. Nature is believed to act predictably under identical conditions, and this assumption of predictability is fundamental for our understanding of phenomena.

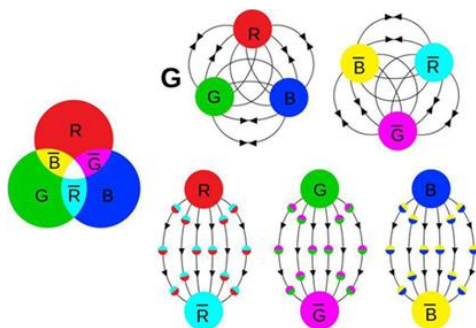
A list of constants of properties is carefully guarded and recorded in nomenclature.

Wikipedia on nomenclature:

Nomenclature is a system of names or terms, or the rules for forming these terms in a particular field of arts or sciences. The principles of naming vary from the relatively informal conventions of everyday speech to the internationally agreed principles, rules and recommendations that govern the

formation and use of the specialist terms used in scientific and any other disciplines.

You can make quite a few comments on transparency in nomenclature as incorporated in the Standard Model. It is accepted knowledge that the photon shows an electromagnetic spectrum with a wide range in frequency. The frequency is, therefore, a variable property that adjusts to exogenous circumstances. You would expect that this would also be the case for the 'gluon' as identified in the Standard Model, but it is not. The gluon refers to eight types of particles relative to the quarks and antiquarks and the color of the quarks. The quarks are declared as a family. Still, the Standard Model identifies for the gluon only one kind of gluon, not a family. This is notwithstanding that as per the Standard Model, the gluon boson binds quite a couple of different quarks combinations.



It is also as if the gluon shows a mass phenomenon and it as if it is not a boson. The distinction between a boson and a lepton becomes hazy.

The neutrino family split up in mass, the electron neutrino, the tau, and the muon neutrino. Here again, the mass phenomenon indicates

distinct differences. Three neutrinos and three types of electrons are listed in the Standard Model.

An electron has invariant mass as a constant of nature. Still, it is difficult to determine this value of invariant mass experimentally. Therefore, this invariant mass is still a theoretical concept. It is physically a non-existent phenomenon. But physicists say among themselves that every particle physicist knows the meaning of this invariant mass.

Therefore, it is a legitimate question:

What drives the modeling and coherence of this Standard Model?

There is no dominant and recognizable discipline anymore in nomenclature to bring these electromagnetic characteristics together in a Standard Model and identify these as 'elementary particles'. Nevertheless, an elementary part is assumed as unique within its type and shows its characteristics as a unity in diversity.

The basic idea of the Standard Model is still valid:

The concept of unity in diversity is absolute, also within The Dutch Paradigm.

The Dutch Paradigm reduces the number of elementary 'particles' to the photon and the neutrino only. All other particles are variants from these two elementary particles, but at different values of the variables. It implies that some of the assumed nature constants of elementary particles are in fact variables, and among these are mass, energy, and spin.

The Dutch Paradigm starts off with accepting that every entity emerging from the Big Bang - be it a photon or a neutrino - lost control of a quant of electric energy of its electromagnetic system. It is the *free electric quant* of that entity. The free electric quant has at the start of the physical universe an energetic content hf . The h is Planck's constant, and f is the frequency. The amplitude of the frequency is an actual constant of nature and identical for all entities.

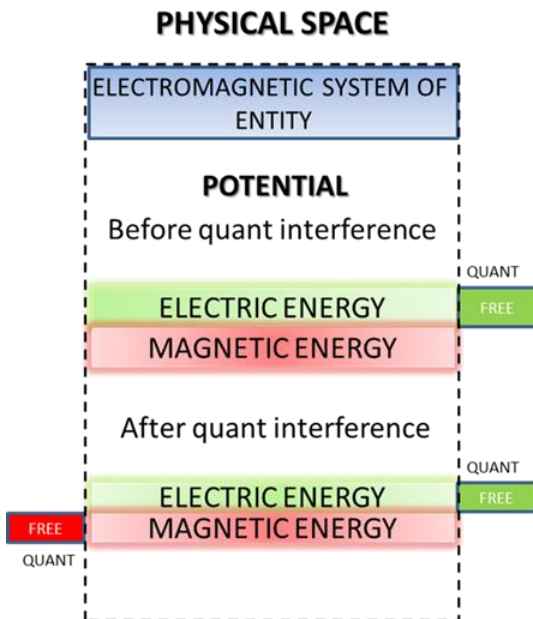
A free electric quant can, unimpeded by its parent entity's electromagnetic system, exogenous interfere with other electromagnetic manifestations present in physical space.

The entity follows the spatial path of its free electric quant in its journey at a distance of $0 - 0,3 \text{ fm}$, $0,3 \text{ fm}$ being the amplitude of the electromagnetic system.

A prominent occurrence happens when the free electric quant of a gamma-photon interferes with a gamma-neutrino.

Once such happens, both entities experience an instant reduction in the frequency of their respective electromagnetic system, while coincidingly, their respective quants continue to make a step move equal to 1 Planck length over 1 Planck period (= speed of light). Consequently, the frequency of their respective electromagnetic systems necessarily reduces likewise, yielding a residual uncompensated fraction of the entity's electromagnetic system equal to Δhf . This uncompensated fraction Δhf manifests itself as the resulting *free magnetic quant* of the electromagnetic system.

The transfer of energy to the free magnetic quant can be illustrated in the simplified figure as shown below:



Whilst the entities are in a state of interference, it is as if they also lose control over a fraction of the magnetic energy of their respective electromagnetic system. After interference, the respective free magnetic manifestation of gamma-photon and gamma-neutrino represents the exogenous free attractive effect of the electron. Most notably, these free magnetic quants exert a gravitational force, or at least it is as if there is a gravitational effect that we can identify with Newton's concept of 'mass'.

In conclusion, The Dutch Paradigm drastically reduces the complexity of subatomic considerations. The fundamental constants of nature connect to the (primal) entity and the solely potentially active electromagnetic system as existed pre-Big Bang. After the Big Bang, the Planck quantum physics constants are pivotal for exposing manifestations as if to restore control over the free electric quants.

The Dutch Paradigm focuses on the free electric and the free magnetic quant in action, whereas the entity is positioned in the center of a coordinate system, perpendicular to its direction of propagation.

By doing so, I avoid the mathematical complexity related to the human observation of phenomena from a great distance, at different speeds, and noted in other coordinate systems.

The circumference of the orbit of the gamma photon is determined by the wavelength of the frequency and thus will spatially enlarge as per interference with a gamma neutrino. The mathematics is conclusive, as illustrated in paragraph 38 of the first book on The Dutch Paradigm.

Therefore, I conclude indeed that:

All entities show themselves as a primal unity in diversity

4. ATOMIC SHIELDING

Subatomic particle physics focuses on the functionality of the nucleus of the atom. Nuclear physics aims to unravel the subatomic constitution, stability, and other characteristics that contribute to the overall behavior of the nuclear structure.

The Dutch Paradigm introduces a new model of the nucleus based on a twin dodecahedron structure of both neutron and proton. This new model can consistently explain the significant unsolved problems in particle physics. Nevertheless, we still lack an understanding of how a nucleus in the atomic structure triggers behavioral characteristics of objects on the micro-and macrocosmic scale.

There is a world between the two types of entities – i.e., the gamma-photon and gamma-neutrino – that constitute the dodecahedrons and what we practically experience as our earthly habitat. As human beings, we live in a world dominated by objects that do not reflect the atomic and subatomic minuscule scale. For centuries we were familiar and satisfied with the archetypes of the four elements: fire, water, air, and earth. In the last century, we have realized that there is more and have identified and discovered over 115 elements since.

The Periodic Table of Elements lists the various elements we encounter or find in our daily life.

The Periodic Table is convenient for scientific and practical applications and therefore entered our life as a suitable successor for the ancient appreciation of distinct, recognizable elements.

In an uncharged atom, the atomic number is also equal to the number of electrons.

The Periodic Table of Elements aligns with the Bohr model of the atom, and the charge number is equal to the number of protons in the nucleus. It is a contemporary science, but the Dutch Paradigm challenges that statement.

'The number of protons is equal to the charge of the nucleus' does not take protons in a dark matter configuration into account

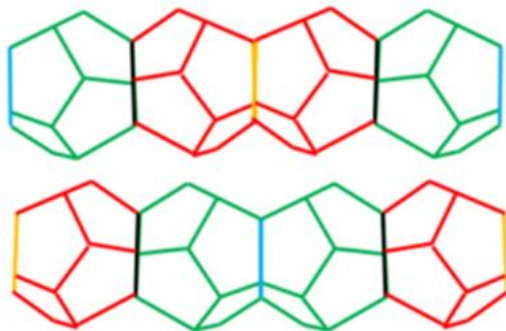
Validating such a challenge by direct human intervention in the nucleus is virtually impossible. The atomic shielding makes it extremely hard to strip all electrons of a charged nucleus.

In the first book of The Dutch Paradigm, I introduced a configuration of two twin dodecahedrons with opposite proton bonds as a form of dark matter, chapter 49, page 174:

Twin dodecahedrons can also configure into dark matter, as a construct of two protons. The section about the Sun will give some clarification.

Therefore, there will be many questions to be answered, but existence of single and twin dodecahedrons in abundance.

An example of such a construct of two protons is given in the first book, chapter 37, page 129:



The top version shows a binding face (the yellow face that is empty from both constituent dodecahedrons), the other one shows two blue faces with opposite charge vectors, enabling a neutron bond. The remaining electric vectors of the two protons would point in opposite directions, and such an arrangement compensates and makes up a two-proton situation with no charge and no spin. The resulting construct is dark matter again.

Whenever this model for dark matter is accepted, it will impact the Periodic Table of Elements.

Chemical elements may have isotope variants. Isotopes are atoms that contain equal numbers of protons but with different numbers of neutrons in their nuclei and hence differ in relative atomic mass and physical properties, whilst their respective chemical properties are nearly identical. Hence isotopes of the same element have the same atomic number and position in the periodic table to different numbers of neutrons in their nuclei.

The assumption of different numbers of neutrons in the nuclei needs revision; some of these neutrons might be dark matter in the form of mutual electrical compensating twin dodecahedrons

The electrically charged nuclei inevitably determine the atomic structure in our earthly environment. We only encounter the nucleus in its shielded composition with electrons in orbit in electron shells.

From a phenomenological view, at least two principles of the atomic structure are recognizable:

1. The nucleus exerts an exogenous impact on the environment - atom to atom - through mutual interaction between their respective electrons in orbit around the nucleus
2. The nucleus assumes a free-floating position in space to adjust for exogenous environmental interaction

We recognize these interactions as we observe the physical states of 'matter'.

In physics, a state of 'matter' is one of the distinct states in which matter can exist. Four states of matter are observable in everyday life: solid, liquid, gas, and plasma. Remarkably, as human beings, we experience the significance of nuclei only when electrons shield them in the atomic configuration. In our earthly habitat, we experience daily the fascinating abilities of atoms to form molecules and complex contraptions of millions of atoms.

We take these fascinating abilities for granted though they are exceptional.

5. 1st & 2^d LAW OF THERMO-DYNAMICS

Energy is vital for human beings.

We need energy in our daily life to survive. It is necessary for nutrition, heating, lighting, and moving around. We have an intuitive relationship with energy. We need it, but we must work to make energy work for us. Most of the energy that we use is for the conversion of energy into a more desirable form.

We use the energy to power our intended actions.

The appreciation of what human beings can do with energy is based on the behavior of ‘matter’ as we deal with it daily. Matter presents itself to us in the atomic structure as solid objects, fluids, and gases.

It is as though the energy gets ‘lost’ while using it, and most of the time, we do not appreciate that phenomenon. We lose control over the energy to support our application.

This errant behavior of energy as perceived by man translates into the 2^d Law of Thermodynamics.

Wikipedia:

The Second Law of Thermodynamics is a fundamental law based on the following elementary macroscopic properties:

- Heat naturally flows from warm to cold areas and never spontaneously from cold to warm

- Work can be fully converted into heat, but conversely, heat can never be fully converted into work

These macroscopic properties can essentially be traced back to microscopic properties, namely the chaotic movement of large numbers of molecules or atoms. Statistical mechanics, developed mainly by Gibbs and Boltzmann, allowed this law to be reformulated in terms of the likelihood of the state of motion of large numbers of molecules. Temperature differences within one system are naturally smoothed out by dissipation of kinetic energy through mutual collisions of molecules, eventually leading to an equilibrium state. Closely related to this is the concept of entropy as a measure of the probability of distribution of microstates, where the equilibrium state is the state with maximum entropy.

The 2^d Law follows the 1st Law and states that energy never gets lost. As we learned at school: energy only goes from a state of ‘high value’ to a state of ‘low value’. The appreciation of energy value refers to the possibility and extent to which energy may serve our intended applications.

The 2^d Thermodynamic Law has subjective connotations for energy in terms of appreciation towards usability and assumed chaotic behavior.

Such a subjective connotation has no meaning in the subatomic interferences.

Nevertheless, it does trigger our human appreciation for specific conditions and first principles in nature. We know that our technical contraptions have a limited lifetime, and reluctantly we expect a

gradual ‘degradation’ of energy and functionality in time. Particle physics takes only the 1st Law of Thermodynamics into account. The 1st Law translates in quantum physics to the Hamiltonian H.

$$H_{operator} = \frac{-\hbar^2}{2m} \frac{\partial^2}{\partial x^2} + V(x)$$

Operator associated with kinetic energy	+	Potential energy
--	---	---------------------

In essence, this is the core of the Schrödinger equation.

The Dutch Paradigm proclaims that the free electric quant is the primal energy source in our physical universe. Energy conversion results from depletion of (part of) the energy content hf of the free electric quant of a gamma-photon or a gamma-neutrino. For this conversion to happen, the manifestations of these entities, while under interference, must obey the speed of light, i.e., their respective electric quant must step move precisely 1 Planck length every 1 Planck time along its path of propagation.

It is the necessary condition for any energy conversion as first principle.

The Schrödinger equations prescribe that the energy content of photon and neutrino before and after mutual interference must be the same. It reflects the monistic principle of the 1st Law of Thermodynamics.

In the regular paradigm, the notion of energy is not precisely defined, and we certainly do not know what the energy content was of the respective entities as they emerged at the Big Bang. We only observe the action of the energy of the free electric quant of an entity.

Richard Feynman made the statement:

‘Conservation’ (the conservation law) means this ... that there is a number, which you can calculate, at one moment-and as nature undergoes its multitude of changes, this number doesn't change. That is, if you calculate again, this quantity, it'll be the same as it was before. An example is the conservation of energy: there's a quantity that you can calculate according to a certain rule, and it comes out the same answer after, no matter what happens, happens.

The description of energy in **Wikipedia** is:

Energy is a fundamental physical quantity, which is a measurable property of a physical phenomenon. A generally valid short definition is not possible because of the many types of physical phenomena, thermal, mechanical, radiation, chemical, etc.; energy is measured in many different ways. All these measurements have in common that the results can be expressed in the same physical unit.

The SI unit of energy is the joule. Since all types of energy are expressed in this unit, they are similar. E.g., the heat released when burning a ton of coal can be compared to the electricity that a windmill generates over a certain period of time, although these amounts of energy have been measured very differently.

Energy is sometimes referred to as the ability to perform work, or more broadly, the ability to bring about change. Energy can also be seen as an essential natural resource, as it is consumed, produced, and used by living things, see Energy (economy).

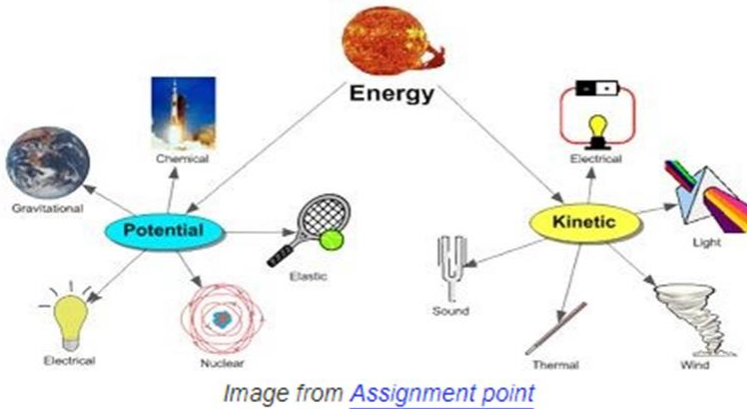
Forms of energy

Within the context of the natural sciences, different forms of energy are defined. These include (see next page):

Some forms of energy
(that an object can have as a measurable property)

Type of energy	
Mechanical	the sum of macrosmic translational kinetic and potential energies
Electric	potential energy due to or stored in electric fields
Magnetic	potential energy due to or stored in magnetic fields
Gravitational	potential energy due to or stored in gravitational fields
Chemical	potential energy due to chemical bonds
Ionization	potential energy that binds an electron to its atom or molecule
Nuclear	potential energy that binds nucleons to form atomic nucleons (and nuclear reactions)
Chromodynamic	potential energy that binds quarks to form hadrons
Elastic	potential energy due to the deformation of material (or its container) exhibiting a restorative force as it returns to its original shape
Mechanical wave	kinetic and potential energy in an elastic material due to a propagated deformation wave
Sound wave	kinetic and potential energy in a fluid due to a sound propagated wave (a particular force of mechanical wave)
Radiant	potential energy stored in the fields of propagated by electromagnetic radiation including light
Rest	potential energy due to an object 's rest mass
Thermal	kinetic energy of the microscopic motion of particles, a form of disordered equivalent of mechanical energy

With so many forms of energy, one can only understand energy's modifications, but not the first principles.



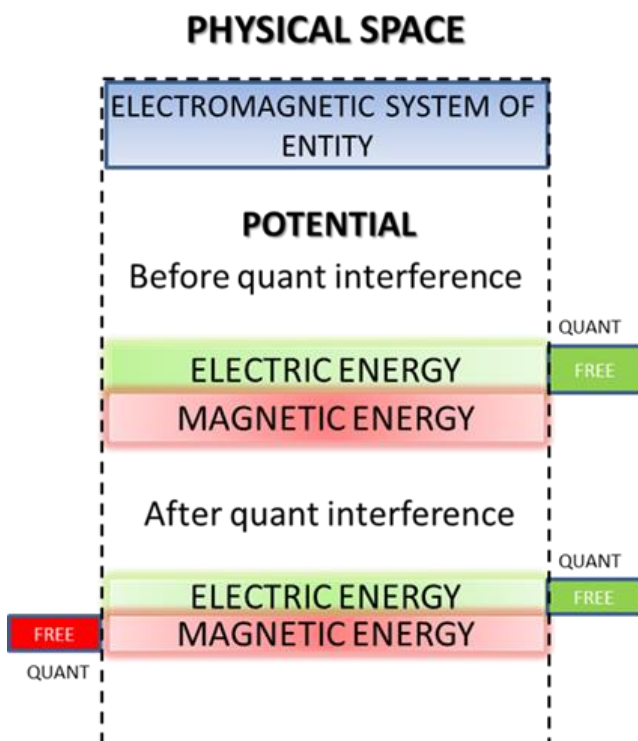
It is ingrained in our brains that making energy work for us is a struggle. We need many energy conversions to force nature to serve and perform functionality outside its natural equilibrium. It is, in essence, a fight against the 2^d Law of Thermodynamics. Eventually, the natural balance will restore its preference over human intervention. Our artificial contraptions will decay, accelerated mass decelerates, localized heating disperse, and artificial light fades away.

In such an appreciation of nature as almost working against our will, it is hard to grasp that an impressive cosmic process evolved, forming objects in physical space up to the shielded nuclei in the atomic structure. During this process, the speed of propagation of these objects is reduced.

All physical electromagnetic manifestations of the embedded entities, though - the gamma-photons and gamma-neutrinos – continued to be endogenously active at the speed of light

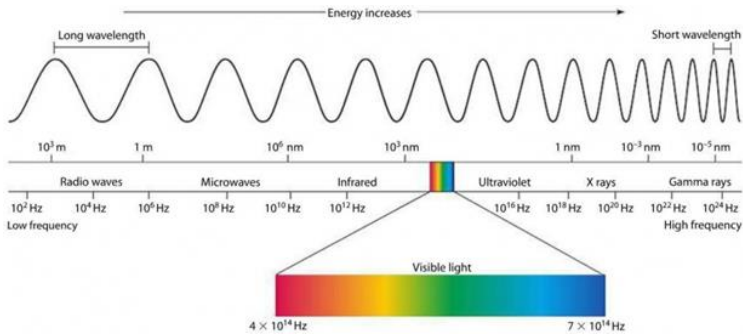
The cosmic process to form the atoms required adaptations of the free electric quants to conserve their manifestations at the speed of light, as explained below.

The preservative action is induced by the free magnetic quants as illustrated below:



The primary constructs of the atom are the electron and the dodecahedron. Both constructs have in the naked condition a resulting speed of propagation referred to as their proper kinetic rest speed. At that speed, there is no exogenous induced kinetic energy stored in the object. The transfer of the Δhf of the quants is up to the

dodecahedron, some **3% of hf**. Therefore, though with a slight reduction of frequency, all constituents are still active at a very high frequency, practically in the gamma section of the electromagnetic spectrum.



In daily life, we insert energy into the object to accelerate, which is conserved in the object as kinetic energy.

$$\mathbf{F} = (\mathbf{m}) (\mathbf{a})$$



This process of enforcing acceleration and reluctantly accepting deceleration by friction is mathematically reduced to the formula $\mathbf{F}=\mathbf{m}\cdot\mathbf{a}$ with a transfer of kinetic energy of $\frac{1}{2} \mathbf{m}\mathbf{v}^2$.

We do this in daily life and scientifically also with subatomic particles such as protons. Intuitively we assume that the objects need additional energy for acceleration up to the speed of light. And indeed, it has shown to be exceedingly challenging to accelerate protons to the speed of light.

The Dutch Paradigm declares that all entities in the objects are still showing their free electromagnetic manifestations at the speed of light, be it in circular orbits.

Acceleration will force all free electric quants to react and preserve their actual speed of light. Therefore, accelerating an object requires energy to be supplied to the constituent entities to counteract the potential over speeding of the electromagnetic manifestations. Therefore, the significant conclusion is that, regardless of how much energy is supplied to accelerate a proton in a machine like the Large Hadron Collider, it will not impact the absolute speed of the electromagnetic manifestations of the proton constituents. That absolute speed is governed by the free electric quant and is still and will continue to be the speed of light: 1 step move of 1 Planck length in 1 Planck time.

In subatomic reality, this is a complex process of electron/electron interference, a sequential induced momentum to the nuclei by all electrons involved and introducing electromagnetic wave fluctuations to conserve the quants' manifestations at the speed of light. As per the Schrödinger Hamiltonian equation, all electromagnetic manifestations of individual entities involved will respond to changes in the energy content of the complex system and must accommodate.

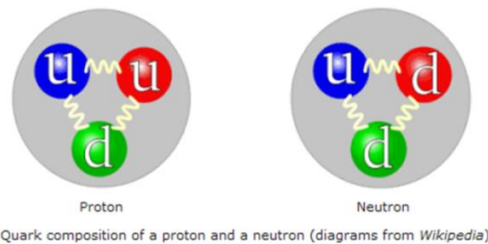
We hardly realize what is being produced by us at the subatomic level to carry out our desire to accelerate.

In daily life, it is simple: we accelerate the car by pushing the pedal to the metal, and it works.

6. PROCESS CONDITIONS TO ASSEMBLE NEUTRONS AND PROTONS

The stability of the proton is a fact. The naked proton is a stable particle that does not break down spontaneously into other particles. The mean lifetime of the proton is at a lower limit of some 10^{29} years.

The assumed composition of the proton is according to the contemporary paradigm, as schematically shown in the illustration below:



It shows that each proton would contain two up quarks and one down quark. The up quark would have an electric charge of $+2/3$, and the down quark $-1/3$ of the electric charge of an electron. Gluons mediate the strong nuclear force to overcome the repelling Coulomb forces. This theory, however, is counterintuitive and based on assumed particles that have never been observed in isolation. The potential flaws in the model are well known, and improvement and supporting details are welcome.

Ethan Siegel made a short description in Forbes Aug 8, 2018:

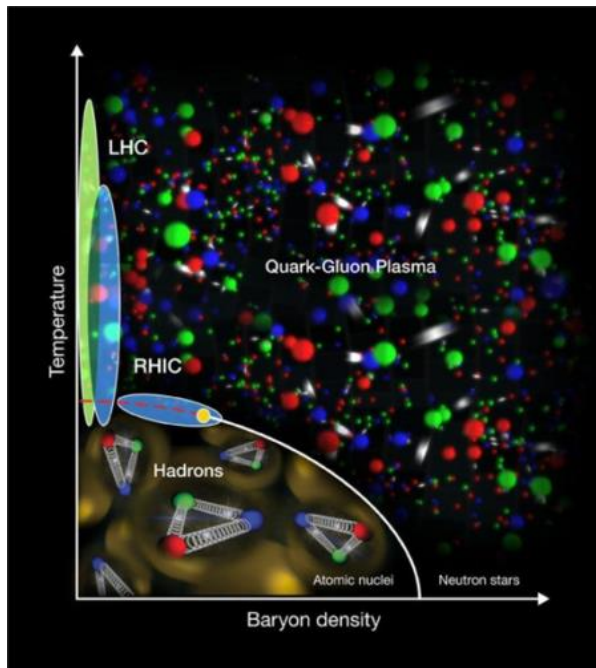
In the heat of the early Universe, but after the fundamental particles have obtained a rest mass, we have every particle-

antiparticle combination that's energetically possible popping in-and-out of existence. There are:

- Quarks and antiquarks,
- Leptons and antileptons,
- Neutrinos and antineutrinos,
- As well as the gauge bosons,

all of which exist so long as there's enough energy (E) to create these particles of given masses (m) via Einstein's $E=mc^2$. Particles get mass just 100 picoseconds (10^{-10} s) after the hot Big Bang begins, but there are no protons or neutrons yet.

With the illustration:

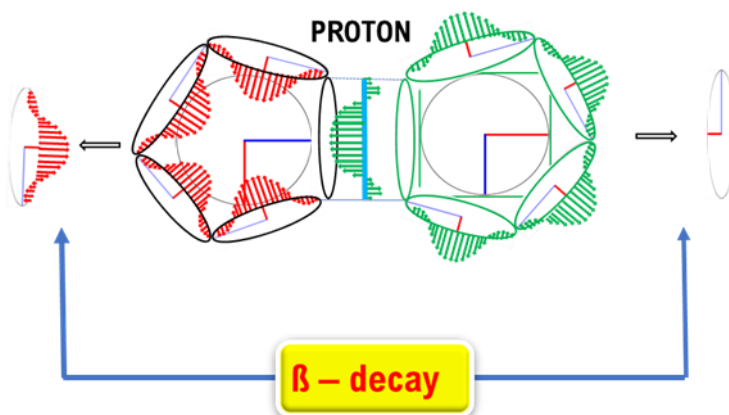


Instead, the universe is so hot and dense that what we have is known as a quark-gluon plasma. The reason for this is counter intuitive, if the only forces you're familiar with are gravity and electromagnetism. In those cases, the forces get stronger in magnitude the closer you bring two particles. Halve the distance between two electric charges and the force quadruples between them; halve the distance between two masses and the force might even more-than-quadruple, as General Relativity dictates.

But take two quarks, antiquarks, or a quark-antiquark combination, for example, and halve the distance between them, and the strength of the strong nuclear force that binds them together does something very different. It doesn't quadruple. It doesn't even double. Instead, the force between them drops.

This description is a short overview of the present line of thinking

I do not wish to comment on this work, but it triggers the ambition to explain the proton forming per The Dutch Paradigm.



The Dutch Paradigm explains the consecutive events happening in the first few seconds after the Big Bang by logical reasoning. It starts from the postulate that at the moment of the Big Bang, there were only two types of entities, i.e., the gamma-photon and gamma-neutron, both active at gamma startfrequency (i.e., without making any references whatsoever to anti-particles or virtual particles).

Logical reasoning concurs with observations and logic as perceived at the macrocosmic level.

To substantiate this claim, I first need to discuss chaos theory, the role of inertia, and the notion of quantum tunneling.

7. SELF-ASSEMBLY OF CONSTRUCTS: THE ELECTRON

The book *A Deep Insight in The Dutch Paradigm* discussed chaos and perfection in generic terms in chapter 17.

Science introduced the notion of entropy to provide the 2^d Law of Thermodynamics with a mathematical structure for making calculations. The focus was initially on thermal energy but has since widened to other forms of energy as well.

Entropy has the natural principle to increase. Only human intervention can violate the working of this principle, but even then, temporarily. Thus, entropy is the natural tendency to create a (thermal) equilibrium via chaos. Though we intuitively understand the notion of chaos, it isn't easy to grasp the opposite notion of perfection.

The notions of chaos, as well as that of perfection, indicate an expected behavior in time. Perfection is a subjective concept. We know that protons do not decay. Philosophical books may try to explain why we assess the proton as being a perfect natural construct. It is not a human construct and does not obey the 2^d Law of Thermodynamics. It simply does not decay, even not when accelerated up to almost the speed of light in the Large Hadron Collider in Geneva.

Still, we have the drive to find out what the proton is and how it entered our habitat. How did it become a perfect construct?

If there is a definition in terms of grades towards perfection in the physical world, the proton will score high. It is a complex construct, and yet, it does not decay into constituents.

But we know for certain that the proton emerged out of a chaos of particles released at the happening of the Big Bang. The question arises:

How can a proton assemble itself out of particles in a chaotic mix?

Chaos also has a subjective connotation, and it implies that it is impossible to foresee the individual entity's behavior in the chaos. But, for the notion chaos, science developed formats to consider the behavior of a set of entities in a chaotic mix.

Wikipedia on Chaos theory:

Chaos theory is a branch of mathematics focusing on the study of chaos — dynamical systems whose apparently random states of disorder and irregularities are actually governed by underlying patterns and deterministic laws that are highly sensitive to initial conditions. Chaos theory is an interdisciplinary theory stating that, within the apparent randomness of chaotic complex systems, there are underlying patterns, interconnectedness, constant feedback loops, repetition, self-similarity, fractals, and self-organization. The butterfly effect, an underlying principle of chaos, describes how a small change in one state of a deterministic nonlinear system can result in large differences in a later state (meaning that there is sensitive dependence on initial conditions). A metaphor for this behavior is that a butterfly flapping its wings in Texas can cause a hurricane in China.

Small differences in initial conditions, such as those due to errors in measurements or due to rounding errors in numerical computation, can yield widely diverging

outcomes for such dynamical systems, rendering longterm prediction of their behavior impossible in general. This can happen even though these systems are deterministic, meaning that their future behavior follows a unique evolution and is fully determined by their initial conditions, with no random elements involved. In other words, the deterministic nature of these systems does not make them predictable. This behavior is known as deterministic chaos, or simply chaos. The theory was summarized by Edward Lorenz as:

Chaos: When the present determines the future, but the approximate present does not approximately determine the future.

The Dutch Paradigm proclaims that conditions emerged conducive to self-assembly in the chaotic mix just after the Big Bang. The electron and the dodecahedrons, single and twin dodecahedrons, are physically self-assembled constructs based on interference of free electric quanta of photons and the electromagnetic system of neutrinos.

The idea of self-assembly at the atomic level is known in chemistry and materials science as well.

The self-assembly at the atomic level relies on weak interactions. On the other hand, both the construct electron and the dodecahedron are formed through self-assembly reliant upon forceful, strong interactions. Such forceful, strong interactions initiate and consolidate the self-assembly for the electron and the dodecahedron. The construct electron and certainly the dodecahedron is incredibly stable, be it potentially reversible. Though modified in value of its variables, the individual constituents are still uniquely identifiable in the

constructs and adopt their intrinsic qualities to act from within their capabilities to consolidate the stable construct mutually.

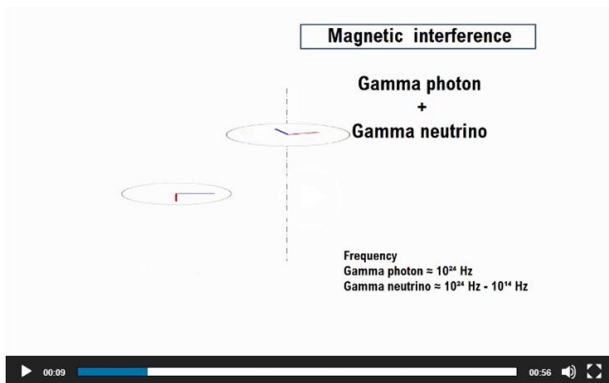
Self-assembly requires specific conditions to be met that allow causal interactions to occur. Such causal interaction or interference may emanate when free electric quants meet one another in space.

The first construct of two entities emerging in the chaos after the Big Bang is the electron. According to The Dutch Paradigm, the electron is a construct of two entities, a gamma-photon and a gamma-neutrino.

The spatial encounter of the respective free electric quant of the gamma-photon and the magnetic manifestation of the gamma-neutrino triggers mutual electromagnetic interference that forms an electron as a construct. Such encounter of a free electric quant of an entity will only trigger the causal reaction of the electromagnetic system of the entities after 1 Planck time.

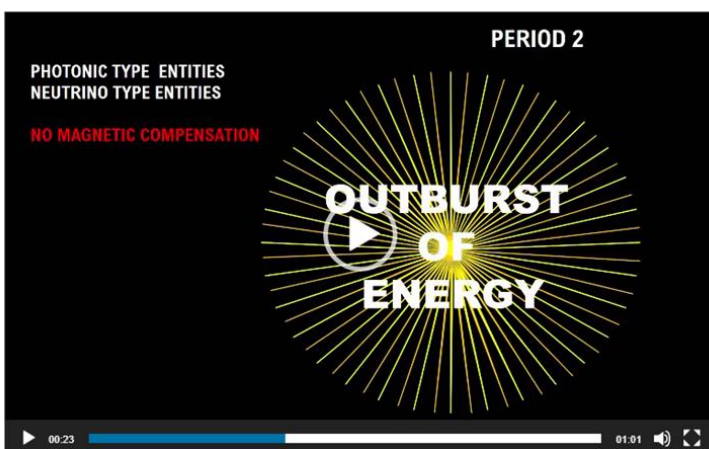
When we analyze the self-assembly of the electron, we can identify the following sequence:

Let us first take a look at the two animations hereafter. Reference to www.thedutchparadigm.org.



Such an animation is simplified but valuable for the explanation of events.

Before the self-assembly occurs, both the entities of the photon and neutrino have to propagate parallel in the same direction. This very condition prevailed upon the Big Bang. It should be noted that both these entities emerged from a state of singularity while perfectly radially expanding due to Coulomb's repulsion only.



At the restart of the magnetic compensation, all entities were located at an equal radius distance from their common singular point of origin.

At this very moment, two types of entities i.e., photons and neutrino's, entered physical space with their respective electromagnetic system in a never-ending effort to achieve permanent magnetic compensation for their from that moment on physically identifiable free electric quants.

The gamma-neutrino's system frequency is reduced immediately with a tiny amount, Δf , which manifests itself as the free magnetic quant of the neutrino. Both entities, photon and neutrino, developed their electromagnetic systems perpendicular to the direction of propagation, and the amplitude thereof is some **0,3 fm**.

Therefore, both types of entities needed to expand perpendicular to the path of propagation with their electromagnetic manifestations with **2*0,3 fm**. This perpendicular expansion triggered the mutual interference between gamma-photons and gamma-neutrino's, resulting in the formation of electrons. From that moment, the gamma-photon within the construct electron started to exhibit in physical space its full-electric manifestation and in asymmetrically sense.

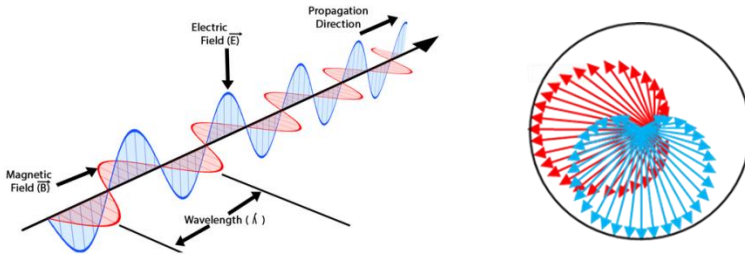
The restart of the magnetic compensation and forming of electrons prohibited the perfect introduction of entities in the physical space and turned the mix into chaos through mutual interferences.

The illustrations of The Dutch Paradigm provide a fair representation of the conditions prevailing at the start of forming constructs in the physical space and a well-conceivable concept for what happened.

Whether these conditions instigated absolute chaos in a mix of the entities that filled the expanding spherical space with electrons, gamma-photons, and -neutrinos might be questionable. At the outer limit of the expanding spherical space, the gamma-photons and -neutrinos propagated at the speed of light, whereas the propagation of electrons was to become trailing behind at a speed necessarily lower than the speed of light.

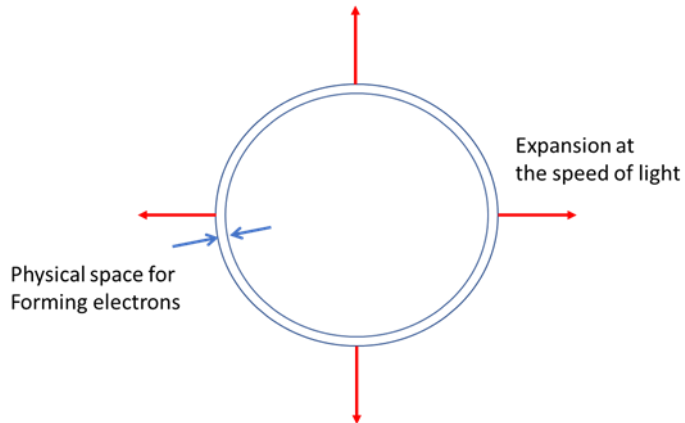
As for the stochastic randomness of this evolving process, it is important to consider that the gamma neutrino manifests itself as a *limaçon*.

Electromagnetic Wave



The free electric quant of the photon may interfere with the electromagnetic system - the limaçon - of the neutrino and hereby form an electron. Note that any electron so formed shall not necessarily be in the same state and position in time to alter the first oscillation.

For further discussion, I assume that this situation was indeed chaotic.



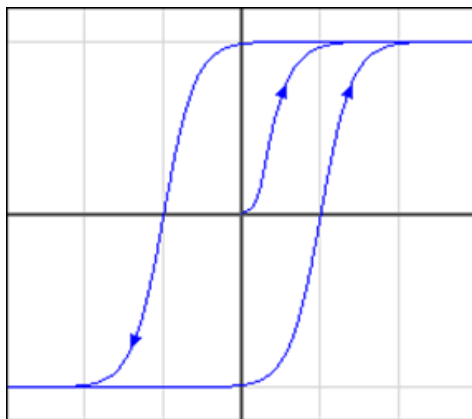
Therefore, the self-assembly process of the electron might very well be feasible subject to suitable conditions being available. A set of variables need to be in sync to provide for such conditions.

There is still a condition that needs further clarification.

The inertia of constructs with a free magnetic quant shows hysteresis.

Whenever a construct is subjected to interference induced by other constructs or gamma-photons, it needs to adopt its internal response to ensure that its electromagnetic manifestations will not exceed the speed of light in any direction. Such responsive action must occur, and their manifestations must follow within one step move of the electrical quant, i.e. of 1 Planck length within 1 Planck time.

Hysteresis or hysteresis (Greek: "lagging behind") is the phenomenon that the relationship between cause and effect depends not only on the magnitude of the cause but also on the direction in which the cause changes.



If you consider hysteresis in the field of particle physics, one can recognize the role of spatial freedom in interference of the free

electrical quant of the photon. The free electrical quant results from the 1 Planck time delay in the magnetic intervention that otherwise perfectly and instantaneously compensates for its cause. If a photon has to adapt itself due to the shape and direction of displacement, the free electrical quant of that photon can do so without creating a free magnetic quant. However, as soon as a free magnetic quant arises in a construct, this is no longer possible. A free magnetic quant is the result of an earlier cause, and it is a reaction phenomenon. The effect impacts the further interferences of the construct, and that effect is hysteresis.

Therefore, the phenomenon of hysteresis is a secondary phenomenon that validates The Dutch Paradigm's postulate that a temporary interruption of the magnetic compensation of the electromagnetic system caused the Big Bang

In other words: before the Big Bang, there was no hysteresis phenomenon; there was instantaneous causality. After the Big Bang, hysteresis was inevitable because there was a 1 Planck time difference between cause and effect.

How many Planck times the hysteresis covers up to a new equilibrium situation can vary. It is dependent on the compounded amount of free magnetic quant, called 'mass' in Newton's terms.

For the forming of the electron, the gamma-neutrino has to adjust in hysteresis. It has a small mass manifestation due to the necessary adjustment of the frequency of the electromagnetic system at the restart of the magnetic compensation. In the self-assembly of the electron, the gamma-neutrino acts as the stabilizer. The electron assembles itself while the neutrino starts to react in the hysteresis mode. Forming of the electron induces additional free magnetic

quants. Accordingly, the electron will, therefore, show a higher level of hysteresis.

Next to the electron, the self-assembly of the dodecahedron starts.

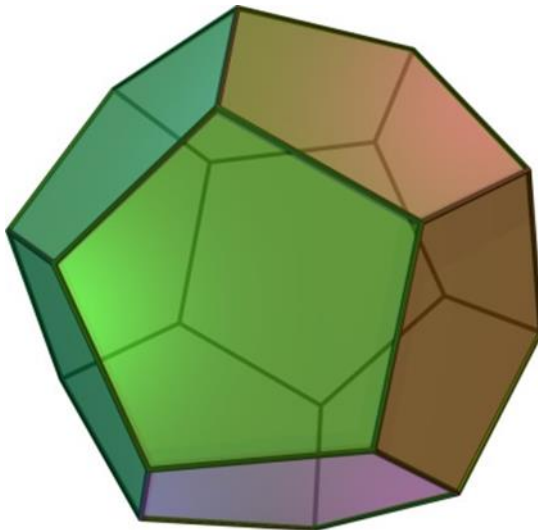
The next chapter clarifies the self-assembly of the dodecahedron.

8. FROM CHAOS TO SELF- ASSEMBLY OF CONSTRUCTS: THE DODECAHEDRON

Neutrons and protons are constructs of greater complexity than that of naked electrons. This statement is valid under both the regular paradigm and the dodecahedron-based model of The Dutch Paradigm.

The dodecahedron model of the construct of neutrons and protons is mathematically defined. On each of its twelve pentagon faces, it houses one electron. The twelve faces encapsulate an open space within which the entities that make up the electrons exhibit their respective manifestations as well.

There is no substance in this open space.



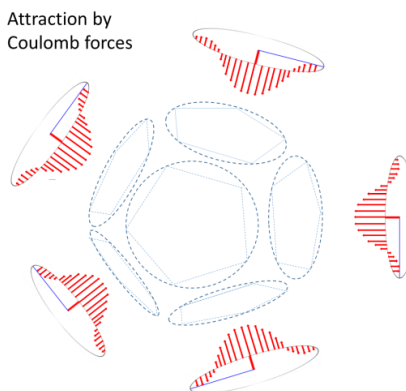
Each pair of electrons on opposite faces brings the Coulomb forces that keep these electrons locked in position. The Lorentz forces are interlocking per face with the electrons on each of the five neighboring faces. The strong Lorentz and Coulomb forces secure the stability of the dodecahedron at large.

All this can be plausibly deduced from the dodecahedron model as defined in The Dutch Paradigm.

Dodecahedrons are the building blocks of the nuclei of atoms in which the nuclei are enclosed and shielded. The logic provides a detailed justification for understanding the building blocks of the physical world we encounter through our sensory observations.

Nevertheless, it remains an issue how such a relatively complex geometrical structure of twelve electrons arises from a chaotic mix of electrons.

How feasible and plausible is it that a random selection of twelve electrons - shortly after being formed - configures themselves through mutual interference into the spatial configuration of the dodecahedron?



At first sight, it is counterintuitive that dodecahedrons emerge from a process of self-assembly. The forming of electrons resulted in an apparent stochastic chaotic mix of electrons, and all odds seem to be against will be against this concept.

I refer to the chaos of electrons in *statu nascendi* as apparent stochastic.

The definition of a stochastic process is:

In probability theory and related fields, a stochastic or random process is a mathematical object usually defined as a family of random variables. Stochastic processes are widely used as mathematical models of systems and phenomena that appear to vary in a random manner.

A stochastic process assumes that there is no predetermined outcome. Chaos will prevail. In that case, a result of the self-assembly of dodecahedrons is unlikely. Therefore, self-assembly of the dodecahedron may be assessed as deterministic or at most probabilistic. I leave this open for a philosophical debate.

To understand what variables are relevant for mixing the electrons, I will highlight several phenomena.

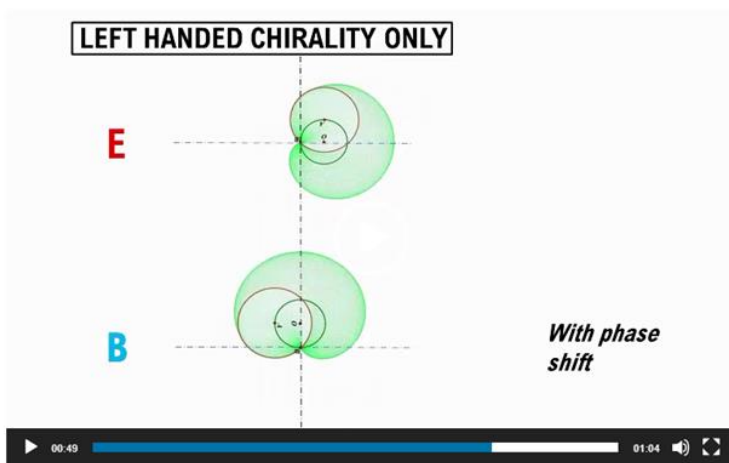
1. INTERFERENCE BETWEEN THE FREE ELECTRIC QUANT OF A PHOTON AND THE ELECTRO-MAGNETIC SYSTEM OF THE GAMMA-NEUTRINO HAS MULTIPLE OPTIONS

I have briefly touched upon this aspect in the previous chapter. The gamma-neutrino is surrounded by gamma-photons and -neutrinos when the magnetic compensation resumes after the initial one Planck

time interruption. At that point, all of them are in a potential state of forming an electron through mutual interference. It is impossible to foresee upfront what interference details will prevail when an electron forms.

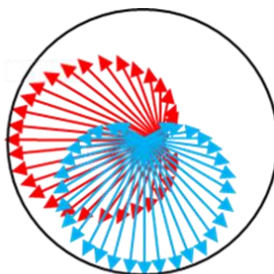
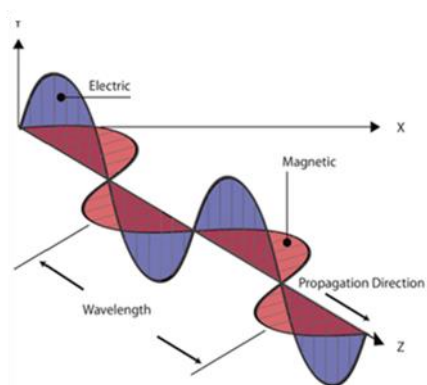
Remarkably, the neutrino also has a distinct pattern of exhibiting its electromagnetic system. This pattern is a limaçon of Pascal which implies that the neutrino's magnetic response to the interference by the free electric quant of the gamma-photon varies relative to the position of the electric quant.

The limaçon as the manifestation of the electromagnetic system of the neutrino is animated below:



www.thedutchparadigm.org.

The position in which the free electric quant of the gamma photon interferes with the magnetic compensation of the neutrino will impact the position and actual value of variables of the electron in the physical space.



Further, the resulting electrons will exhibit different spatial orientations in the two eigenstates, known in the traditional paradigm as the electron and the positron.

2. THE ELECTRONS WILL SPATIALLY EXPAND

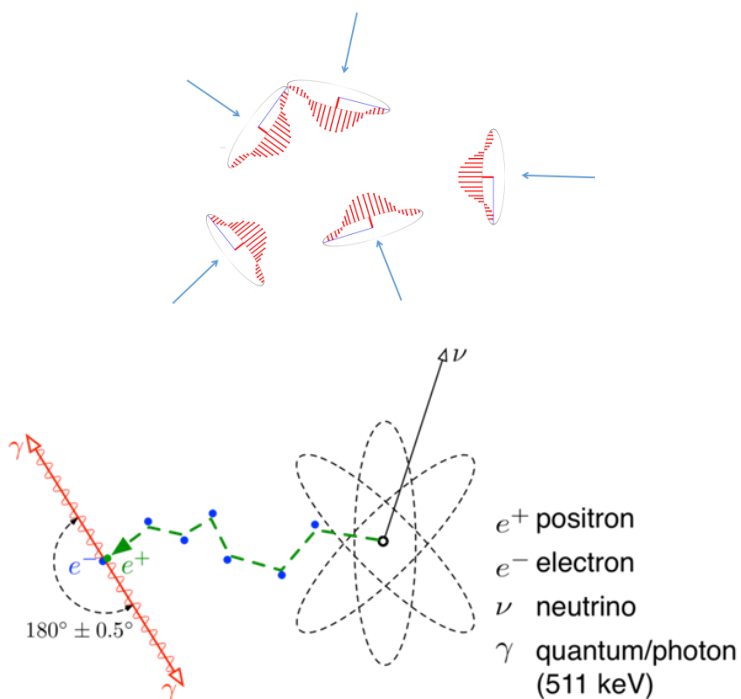
Once an electron is formed, its constituents must stepwise spatially rearrange to stability following the obligatory 1 Planck-length per 1 Planck-time rule.

Depending on the exogenous spatial restrictions, it requires a very dynamic, frequent repositioning of said constituents. The electron might conceivably also encounter an additional interference from or collision with fellow electrons but must absorb the consequences thereof within the construct itself. It is a very wild happening, but of course, that is a human appreciation. Although we all have a concept of what can envisage what highly dynamic behavior is, gamma frequency usually is outside our normal scope of imagination. Still, a

thinking exercise allows studying such processes, at least in terms of potential impacts and outcomes.

3. ANNIHILATION OF ELECTRONS MIGHT OCCUR

It is likely that also electron pairs will annihilate and decay into its original constituents. We know this from the LEP collider in Geneva as the electron-positron annihilation.

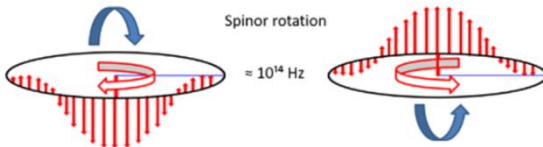


When electron pairs annihilate, the constituent gamma-photons and -neutrinos break the interference and are singular again. The

orientation of propagation is now at random, and they can move in all directions. This will add another variable in the mix of electrons, gamma-photons, and gamma-neutrinos.

4. SPINOR BEHAVIOR

Electrons exhibit anisotropic electric behavior of the asymmetric electric component of the gamma-photon that orbits around the neutrino entity. Electrons oscillate at a frequency of 10^{14} Hz. Electrons also show anisotropic electric behavior with opposite spin after a spinor rotation.



Spinor rotation is a phenomenon that is of relevance to electrons in close proximity to one another, and involves the rotation of an electron into a specific position relative to its fellow electron so as to mutually attract each other. This is the electron-‘positron’ attraction.



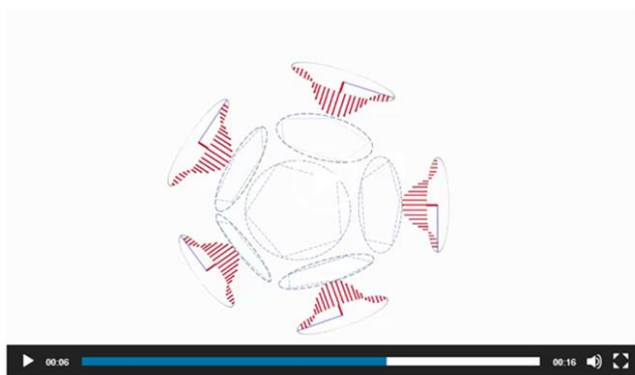
The spinor is another variable in the highly dynamic system that governs the entities' interference behavior. The impact is random due to the position of the neighbor electron to which it rotates to a position of attraction. As discussed, in regular science, spinor behavior is known but not yet understood, and it is one of the demystifications that The Dutch Paradigm brings to bear. The human observation assumes a solid isotropic nature of the electron's electric charge while, in fact, it is "quasi-isotropic" in character.

5. ELECTRONS PRESENTED IN THE MIX

The formation of electrons and dodecahedrons and mixing conditions are stochastic of nature but still relatable backward to the source.

The question is: did such a process of self-assembly occur? Is it plausible?

The animation below visualizes the self-assembly process of the dodecahedron in a simplified form because it is isolated from the dynamic environment in which such a process occurs.



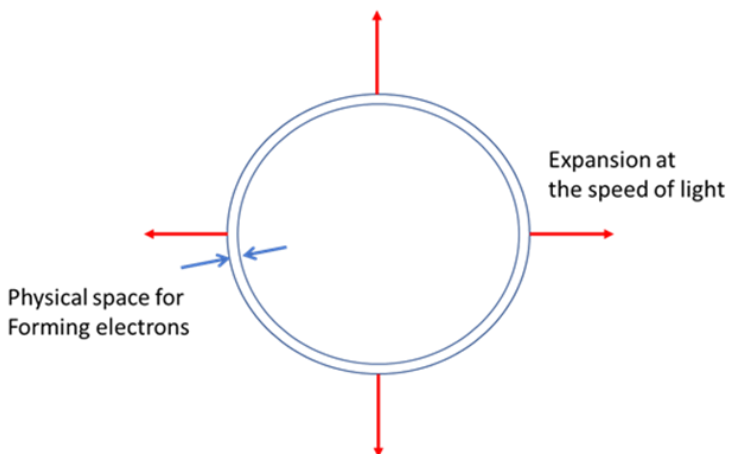
www.thedutchparadigm.org.

But even then, it is still quite conceivable. No additional requirements are needed to form the dodecahedron out of gamma-photons and gamma-neutrinos with free electric quants. Again, it is in line with Occam's razor, plausible and straightforward and with a minimum of additional assumptions.

6. ADDITIONAL CIRCUMSTANCES

Several circumstances are not yet detailed. The speed of propagation of the entities that escaped interference is still the speed of light, and consequently, the perimeter of space filled with entities continues to expand.

From the moving spherical perimeter inwards, a volume fills up with electrons, as illustrated in the figure below:

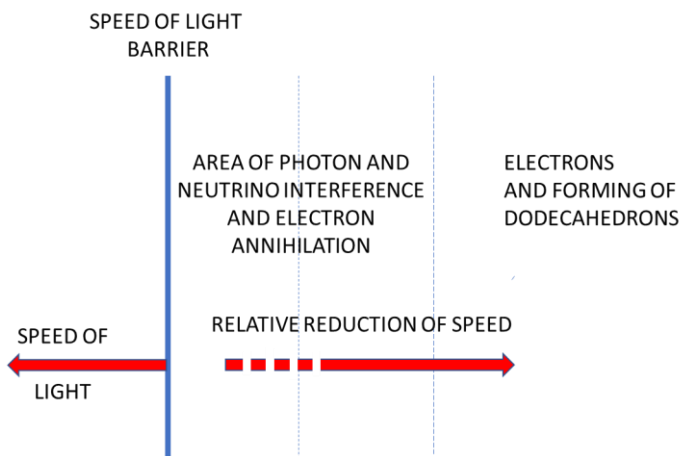


Random interferences will slow down the electron's propagation speed while its constituents persist in exhibiting the electromagnetic manifestations at the speed of light.

The electron shows its presence also with the powerful asymmetric electric manifestation of its gamma photon. The electron, therefore, may interfere with other entities with powerful Coulomb forces at short distances. One can say that each electron claims space in the mix of electrons to demonstrate its existence, offers new abilities to interfere while reducing its speed as a construct.

The electrons relatively retract themselves from the radial expansion in space, and the electrons will be slowing down in speed, entering a less densely filled space. The reduced speed of propagation is a slow down towards its kinetic rest speed.

To illustrate this in more detail, we can use the perimeter barrier as the line of observation in our minds. Then it is as if the electrons push themselves back from that perimeter.



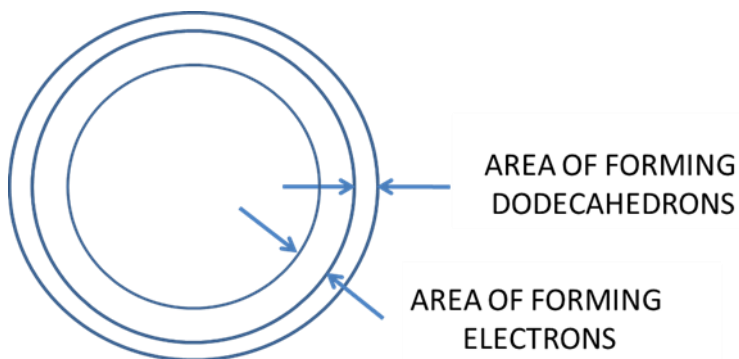
This retardation in speed brings the electron in time in less densely filled space, improving an electron's ability to sustain its existence.

The next step is to form the dodecahedrons.

Forming the dodecahedron requires an additional reduction in the frequency of the free electric quants of the constituent electrons and a subsequent transfer of the energy into the free magnetic quants. The free magnetic quants are energetically equal to the Newton “mass,” also numerical.

Therefore, the last part of the animation of forming a dodecahedron shows that the dodecahedron needs to expand spatially and strives towards a propagation speed of $0c$. The dodecahedron has a kinetic rest speed of $0c$, as discussed in chapter 26 of the book *A Deep Insight into The Dutch Paradigm*. A total reduction to the kinetic rest speed is not possible yet at the formation of the dodecahedron, and the construct can absorb the kinetic energy, as discussed in chapter 27 of the same book.

A reduction in expansion and propagation speed will also spatially occur here when the dodecahedrons form.



The process of self-assembly of dodecahedrons is thus well conceivable. The conditions necessary to facilitate the self-assembly of the dodecahedrons seem to be fulfilled.

The descriptions and illustrations are the results of a thinking exercise. We think about what might have happened as predictable behavior of the compounded movements of the free electric quanta as from the start of the physical universe.

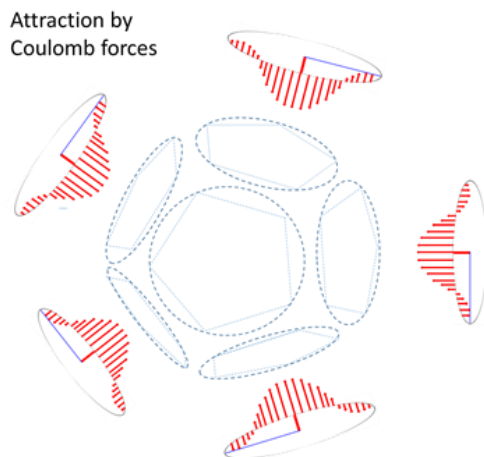
It is a thinking exercise fundamental for understanding sensory impressions.

The next chapter will discuss how the dodecahedrons strengthen the stability against potential endogenous disruption.

9. SYNCHRONIZING THE DO- DECAHEDRON OSCILLATION

Electrons go through a tumultuous period of chaotic mixing and mutual interference before consolidating in the dodecahedron. The preceding events leave a distinct imprint on each of the twelve electrons that make up the dodecahedron.

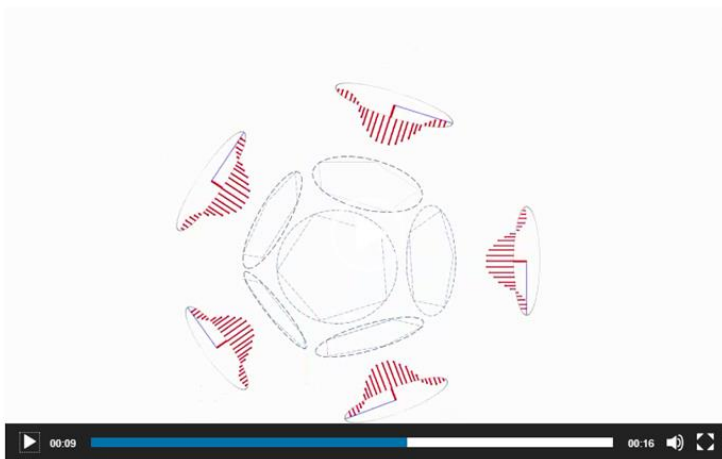
The twelve electrons arrive from multiple directions driven by Coulomb attraction, the electron 'positron' attraction.



Once the electrons are locked in place, each electromagnetic system still bears its unique historical imprint. Each of the twelve electrons has a slightly different system frequency and time to the subsequent oscillation. The respective electromagnetic systems are not

synchronized at that time and therefore will not oscillate simultaneously.

In animation:



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When one of the electrons of a dodecahedron oscillates out of sync, the dodecahedron will self-destruct, and the electrons will resume the naked status again.

Synchronization in oscillation is a necessary condition for the single dodecahedron to acquire lifetime stability

Is it plausible that the twelve electrons of a single dodecahedron synchronize and harmonize in frequency and oscillation?

Wikipedia on synchronization:

Synchronization is the process or the result of creating something simultaneously. It is derived from the Greek συν (sýn) 'together' and χρόνος (chrónos) 'time.'

With some further explanation:

It was not until the nineteenth century that synchronization began to play a significant role in human history. The trains were running so fast that a difference in local time became apparent. It became necessary to set the clocks along the railway line. Synchronization of the clocks was also a requirement for the safe use of a single track. Thus, the trains could continue to run according to the timetable so that two trains could not run into each other on the same track section at the same time.

Inherently we assume that synchronizing requires human intervention. Intuitively we do not expect synchronization as the outcome of a natural phenomenon. Living creatures can synchronize and bring order to a higher level, and non-living objects are assumed to fall back into some form of chaos.

It is, therefore, hard to accept upfront that synchronizing the dynamics of multiple entities within a construct at the subatomic level occurs as a self-organizing process.

Nevertheless, this synchronization is what happens with the twelve electrons of the dodecahedron. The synchronization requires minor adjustments through repetitive mutual frequency tuning. You can say nature itself provides alignment and harmony, so without exogenous intervention.

This phenomenon of synchronization of complex dynamical systems is though well known.

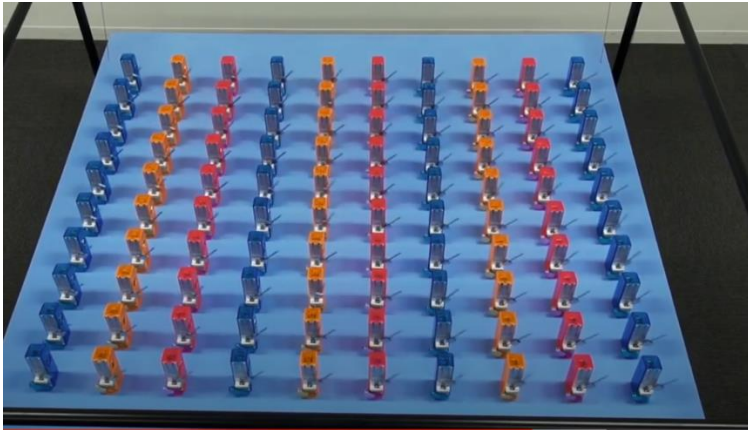
We can empirically demonstrate that synchronization occurs when you physically link out of sync metronomes by placing them on a freely moving plate or shelf. After some time, the metronomes will act in sync.

The phenomenon is demonstrated in this video:

https://www.youtube.com/watch?v=t-_VPRCtiUg&t=359s

There are many YouTube videos available to witness this phenomenon in behavior.

A still shows this phenomenon:



This example clarifies that synchronization will inevitably occur between similar systems if there is a suitable medium for equalizing

frequency and the associated energetic content. The medium must allow the transfer of kinetic energy between the metronomes.

The phenomenon of synchronization has been worked out mathematically by Yoshiki Kuramoto, and it is a model for the behavior of a large set of coupled oscillators.

In the dodecahedron, the free electric quant of the gamma-photon of the electron on each face interferes by rotation. It generates with the cardioid of five adjacent electrons the Lorentz force. These rotations induce an energetic stabilizing effect on the electromagnetic systems in the planes of the dodecahedron.

The oscillation is at 10^{14} Hz, the system frequency is active at 10^{23} Hz, so there is ample room for harmonization rounds.

The alignment is lost when an entity is ejected out of the group. With Kuramoto's model, various compositions can allow such energy exchange. In other words, additional constructive information is generated through the geometrical structure of the group and induces a collaborative, self-sustaining, dynamic system.

Group information supersedes the individual historic accumulation of interferences at the entry and departure of an entity

Each dynamic system has its proper characteristic response to exogenous interferences. The dynamic system may self-destruct or become almost indestructible, as with the dodecahedron.

The chaos theory stipulates that underlying patterns govern dynamical systems whose apparently random states of disorder and irregularities and deterministic laws are susceptible to initial conditions. It stands to reason that such underlying patterns can

provide self-assembly and self-harmonization for the electron and dodecahedron as plausible outcomes.

Chaos theory follows underlying patterns but does not predict the emergence of higher levels of group harmonization of constituents.

The Dutch Paradigm introduced the geometric models for the electron and dodecahedron and validated these as metrically in line with experimental measurements.

A mediator system is needed to support the energy exchange within the group of constituents to induce synchronization and harmonization. For the metronomes, the freely movable plate is the mediator. In the dodecahedron and the electron, the mediator is the electromagnetic systems of the entities.

Therefore, the effect of self-organization needs at least an exchange of information that can link the systems under consideration. In mainstream particle physics, scientists refer to virtual particles and virtual forces as mediators. The lack of identifiable ontological phenomena induced the assumption of necessary virtual interference. The contemporary paradigm in Particle Physics was extended with metaphysics to bridge the gap in the not well-understood ontological phenomena.

A freely movable plate, the air, or electromagnetic systems are ontologically physical, not virtual, and not metaphysical.

We need to study the apparent monistic phenomenon in a time sequence, and we have to find ontologically identifiable manifestations of entities. The electron's alignment in a dodecahedron is physical, just like the Pauli Exclusion Principle within The Dutch Paradigm is physically fulfilled. The monistic order can only exhibit

itself as causality, while our human thinking ability can understand the compounded manifestations in causality.

Man's tendency to classify energy types according to usefulness for labor is not a natural form of attaining perfection. The entities brought together by humans and participating in human contraptions do not share a common medium to harmonize, and there is no attunement and perpetuation. Human constructs lack underlying patterns to preserve and stabilize the changes made by man in the monistic physical world.

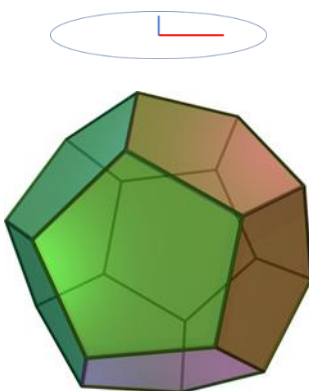
The artificial contraptions inevitably fall prey to decay

It is the underlying first principle of nature that perfection will reign over chaos. The proton as a twin dodecahedron is such a perfect construct.

Scientists need to discover or recognize what the underlying patterns are

10. CHAOS AND PERFECTION, CAN IT COINCIDE?

The self-assembly process of the electron and the dodecahedron is explained in previous chapters.

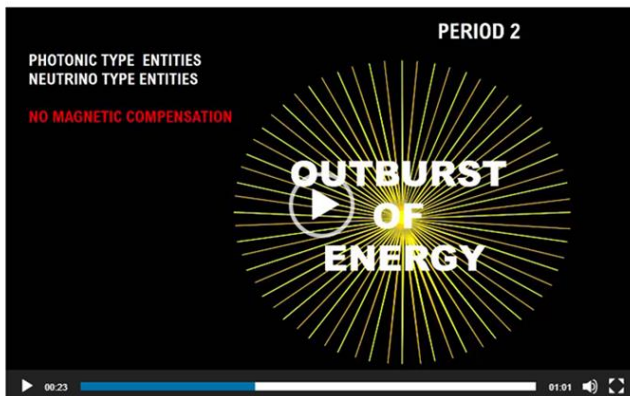


Both constructs are stable in naked condition and emerged in vast numbers from a chaotic mix of entities. Though counterintuitive, it is wondrous that self-assembly can, on logical grounds, happen. It gives rise to quite a few questions, and I will elucidate on some.

Question: *why was the mix of entities chaotic?*

The mix is chaotic because the entities manifest themselves in a limited physical space relative to the size of their free electric manifestations. Thereby, their free electric manifestations will interfere randomly.

I illustrated the sphere and perimeter previously that at the restart of the magnetic compensation became spatially recognizable.



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Question: *What happened within that expanding spherical space?*

No known physics defines where physical space starts. Entities released from the aforementioned spherical space did present themselves as separated entities at the outer perimeter, manifesting their free electrical quant at that perimeter in what we as humans identify as physical space. It is physical space because – in due time - we assign measurable notions as length, diameter, time, speed, and the like to what we sensory observe and process in our thinking into images.

Question: *What 'distance' was covered 'previously' by the entities showing their free electric quant at the perimeter?*

Distance and time are measurable notions or dimensions, and they do not apply in non-physical space. It is similar to the impossibility of measuring the dimensions of 'object' in our dreams.

After the Big Bang, the space within the said perimeter is physically empty; there are no observable manifestations. Therefore, a human cannot directly spatially define the cause of the Big Bang.

Question: *Why is the physical space limited at this perimeter?*

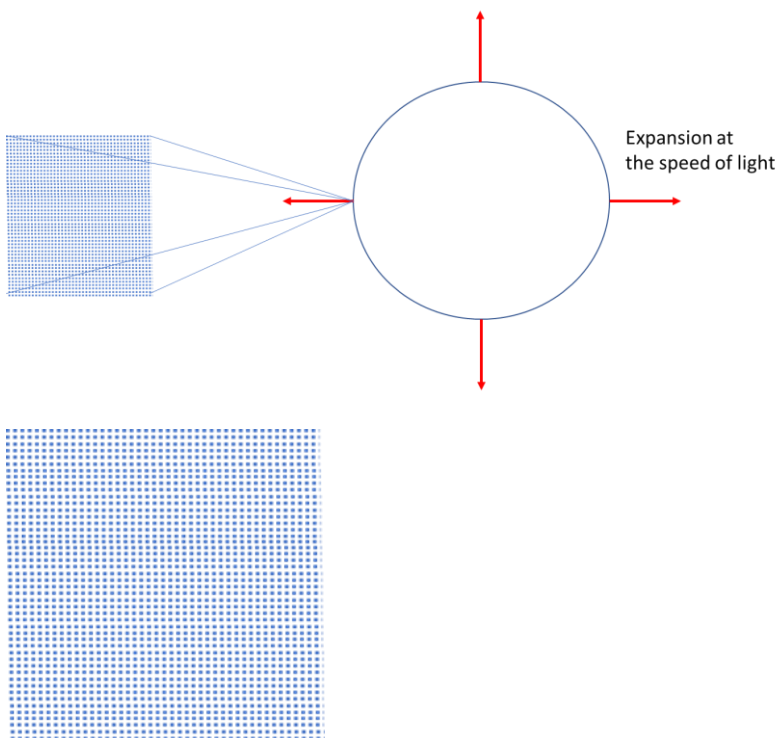
We have to accept and understand the split in a duality between the monistic manifestations and our observation thereof. We live in the monistic physical reality but assume that we also have the notion of thinking. The images in our thoughts are non-physical. Thinking by man is supported by triggers from senses and sensory information, but these are physical again. From the start of the free electric quants in space, we can observe and follow events in time. We are even able to reconstruct in thinking what happened.

However, we cannot bridge our duality of observing and thinking about the monistic world. We cannot bridge time to its cause. We can only assign perceived causality of the monistic world by thinking over time and through compounding sensory information in measurable values.

Question: *Is it possible to dimension the diameter of the perimeter as observable from physical space?*

Indirectly we can, but it is speculative. Space can be physical from that perimeter on, in the outward direction, and we can project notions of diameter and structural meshing. It is plausible to assume that all entities arrived at the spherical distance of 1 Planck length of each other at the moment of the restart.

Such meshing in arrivals is regularly distributed in equal distances over the surface of the perimeter.



With a spherical meshing of 1 Planck length and an estimated number of entities, we can calculate the surface of the perimeter and its diameter.

A rough estimate for the total number of atoms in the universe is 10^{80} . Based on the atom Hydrogen, this entails **24 entities per atom** to **$2,4 \cdot 10^{81}$ entities**. The Planck length is **$1,6 \cdot 10^{-35}$ m**. A mesh-value at the Planck length brings the perimeter radius at **$2,2 \cdot 10^5$ m** or 220 km in SU units. Although an order of magnitude calculation, this gives an indicative value.

Therefore, the sphere's perimeter from which the free electric quants became physically manifest is traceable, at a fixed value. It is not a

variable. The same applies to the meshing and the total number of entities that entered the physical space. We then have a fixed regime of allowable motion of the electromagnetic manifestations, 1 Planck length in 1 Planck time. The consequence is that each free electric manifestation - now present in physical space - has room to maneuver itself in step moves of 1 Planck length.

Question: *Does this step move respect the initial structured mesh?*

No. There is no additional limitation for a free electric quant for the pattern of step moves with 1 Planck length of the free electric quant. The step move can be executed in all directions with a radius of 1 Planck length.

After each step move, the free electric quant may encounter other electromagnetic manifestations and potentially interfere. The free electric quant cannot be absorbed by the electromagnetic system of the entity from which it is a manifestation.

Therefore it is a free electric quant, but it is physically limited in freedom. It can also only exercise its freedom within physical spatial restrictions. The free electric quant is sovereign within its physical limitations. The free electric quant is in its proprietary monistic physical space within these physical boundaries. It is the bubble of freedom in captivity.

Question: *But why did the mix of entities become chaotic?*

Within its physical boundaries, the free electric quant is in its proprietary physical space. But there is no restriction for other free electric quants to enter that same space. It is only proprietary relative to its entity, but there can be a shared presence and subsequent interference with electromagnetic manifestations of other entities in

that space. As the meshing is at the Planck length of $1,6 \cdot 10^{-19}$ fm and the amplitude of the free electric quant is perpendicular at $0,3$ fm, it becomes a crowded space. It will result in a chaotic mix of entities.

Question: *Will this chaos prevail?*

No, because the physical space is expanding. The entities entered the physical space at the speed of light, also at the start at 1 Planck length in 1 Planck time. The physical space will enlarge, and the content of entities will dilute. The free electric quants will still propagate with one step move of 1 Planck length in 1 Planck time. The physical space will also dilute through the reduced radial expansion caused by an average reduction in the propagation speed of entities in constructs.

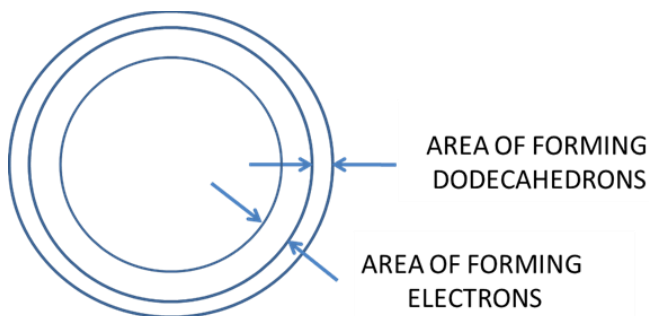
Question: *When are the conditions for the formation of electrons available?*

The free electric quants move with each step to new positions. All other electromagnetic manifestations of the entities are reactive to the step move of their free electric quant. They follow in behavior at a delay of 1 Planck time to the new and unique situation within their physical realm. The entity modifies its path through space and absorbs the consequences of the freedom of the free electric quant.

The physical space will grow at the speed of light and by retardation of entities that slow down due to the chaotic interferences of their free electric quants. A radial area, a shell, will absorb in dilution the entities, and gradually conditions will become favorable to construct and sustain electrons.

The same will happen with a further dilution for the shell with electrons. Conditions will emerge that favor formation of dodecahedrons.

As per illustration:



The areas are a shell limited by the expanding outer perimeter of the sphere and inwards with the perimeter that showed up at the restart of the magnetic compensation.

Question: *What constants of nature are prescribed so far?*

If we accept the conditions at the perimeter as just described, then a set of first principles and parameters is fixed. Why have these parameters of 1 Planck length and 1 Planck time a specific value in the physical space? Also, why do we find frequencies in our thinking when we reflect on compounded sensorial impressions? Why is the amplitude of the free electric manifestation **0,3 fm**? Why this massive number of entities?

There is no direct answer available for this parameter setting. Still, it is conceivable that this parameter setting allows for process development. Perfection and chaos are instituting a range of events that eventually result in the amalgamation of constructs in stars. At

the same time, empty non-physical space will further emerge, also a new step in chaos and perfection.

Therefore, I assume that chaos and perfection can coincide. The setting of parameters apparently tunes towards self-assembly and self-synchronization, at least up to the level I have discussed.

There will always be the other question:

Where does this parameter setting originate?

It is an open question.

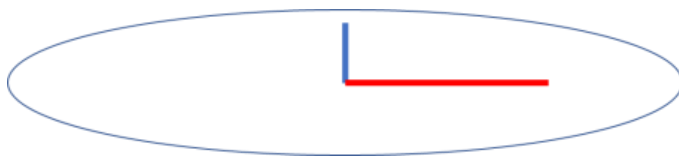
11. THE STRUGGLE TO EXPAND

When we look to the sky and into the universe, it is mostly ‘empty’ space. Therefore, it is difficult to conceive how electrons were formed and consolidated into dodecahedrons in emerging space at the beginning of the physical universe.

At the perimeter, where the entities started to manifest their free electric quants, chaos occurred because of intense inducing spatial expansion of their manifestations perpendicular to the direction of propagation. This expansion is up to **2*0,3 fm**.

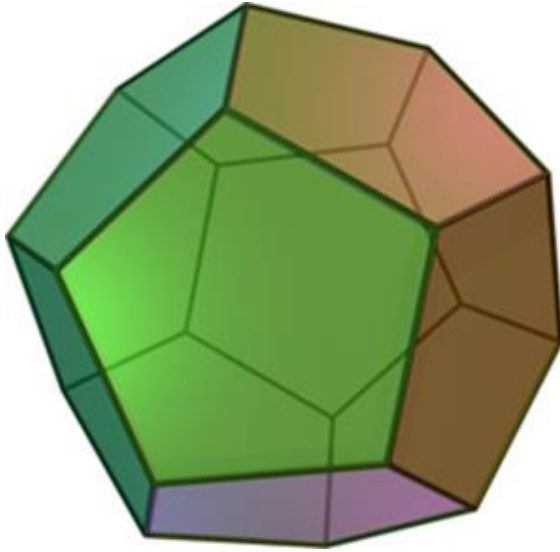
These intense interferences occurred at the start without lasting results, but eventually, electrons emanate from this could sustain.

The electrons had to push themselves into existence by repressive expansion. This expansion started perpendicular to the direction of propagation of the electron in the form of a disk, but the electrons began immediately to tumble wildly, as explained in a previous chapter.



The direction of propagation of the electron is towards radial expansion, and when an electron tumbles, it must adapt its frequency relative to its radial direction of propagation. Therefore, the size of the disk varies with the frequency. All to make step moves with the electrons manifestations that are 1 Planck length in 1 Planck time.

The next phase is the formation of dodecahedrons.

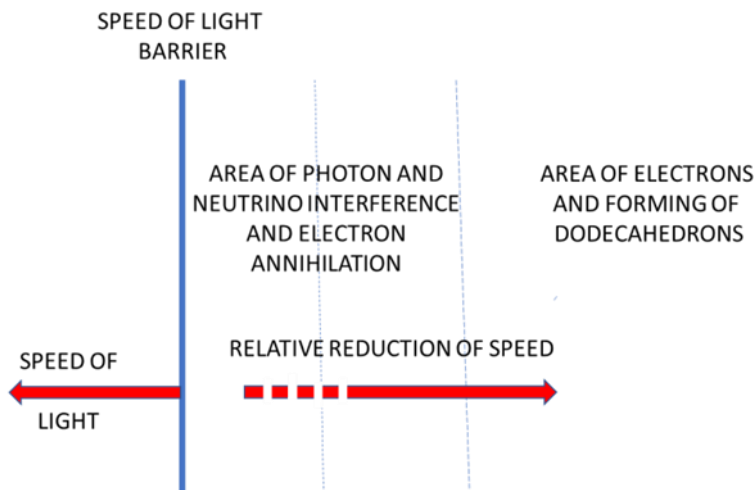


The circumscribed sphere of the dodecahedron has a diameter of **0,9 fm**. Electrons are like a disk, but the dodecahedron is a spatial 3D enclosed construct of **0,9 fm**. As a result, the formation of the dodecahedron requires a further dilution of the density of the physical space to occupy and maintain its structure in its required geometric volume.

The dilution will become effective due to two effects.

1. The 'barrier' of the speed of light continues in radial expansion and
2. The electron and dodecahedron will reduce speed relative to the speed of light

As per a previous illustration:



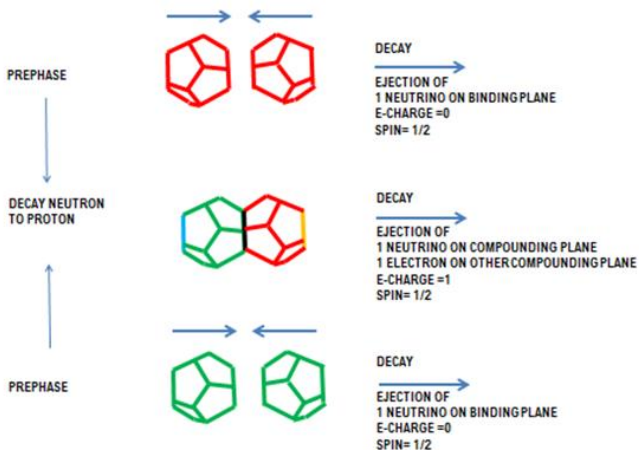
The formation of the dodecahedrons is circumstantial inexorable. It results from a self-induced construction process governed by Coulomb and Lorentz forces. Space gradually dilutes and creates room for expansion that allows the explosive formation of the dodecahedron.

Question: *Is it plausible that dodecahedrons merge in this phase of development of the physical universe?*

Twin dodecahedrons constitute the neutron, and by β^- -decay of the neutron, the proton.

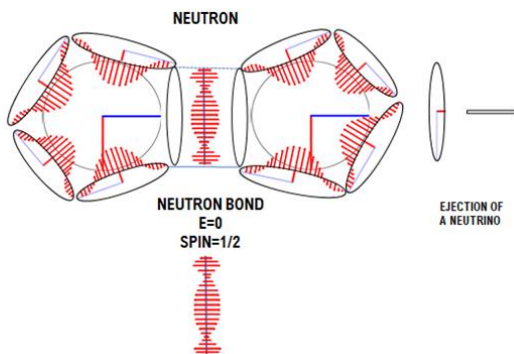
This merging does not require further expansion of the construct in space anymore. Twin dodecahedrons occupy twice the volume of 1 dodecahedron.

This illustration shows the various possibilities of two dodecahedrons to merge:



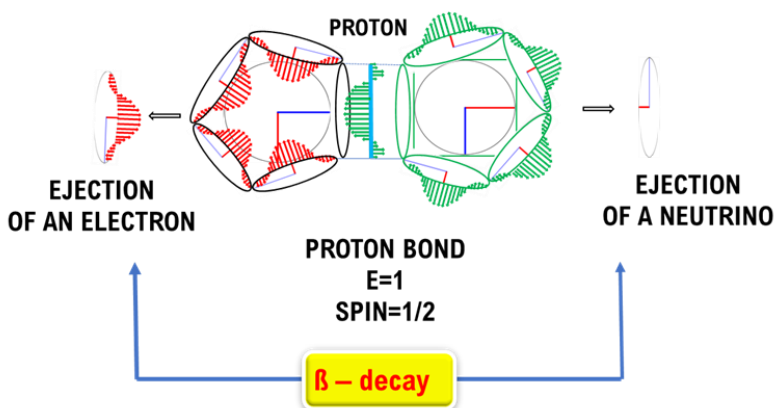
The colors red and green indicate the status of the electrons on the faces. They are since the last oscillation either in the electron or ‘positron’ state.

The next illustration shows the forming of a neutron. On the merging faces, a neutrino ejects. The two merging faces will thereby evolve into a mutual binding face of the two dodecahedrons. The resulting binding is a neutron bond.



Merging into a neutron requires that the two faces be pushed together to impose the decay. These two binding faces resist such interference. This behavior is known as the Pauli Exclusion Principle, which forbids two electrons having the same spin to interfere constructively. Breaking of this principle on the binding face needs to happen and requires sufficient explosive force from competing dodecahedrons, all fighting for space to inflate. One neutrino ejects, leaving two gamma photons in orbit on the binding face.

Whenever a neutron is formed, it may show β -decay into a proton bond.



Another possibility is that two dodecahedrons in different eigenstates collide. In that case, the free electric quant of the electron on one of the two adjacent faces will interfere by crossing the magnetic manifestation of the electron of the other dodecahedron. This interference can induce the actions required to merge on the binding face. Therefore, a neutrino on the binding face gets ejected. Subsequently, one neutrino on one outer face and a positron on the other outer face eject.

In this early stage of the development of the universe, the available explosive pressure from the fight for space enforced the forming of twin dodecahedrons.

This process of forming twin dodecahedrons in the early stage of the universe extended over a large area. The density in this area decreased commensurate with the ability of dodecahedrons to transfer kinetic energy to entities and constructs in their immediate surroundings.

The process conditions to arrive at this next level of perfection are complex and challenging to describe. For this reason, the description of the process of forming nuclei - at least the less complex nuclei - is kept simple. More interference within the area, like the dodecahedrons' inertia reaction on exerted forces and naked gamma photons' ability to impact constructs with a pulse, are not discussed in this chapter. The description is only tuned to answer the question.

Question: *Is it plausible that dodecahedrons merge in this phase of development of the physical universe?*

I think the answer is yes. It is plausible.

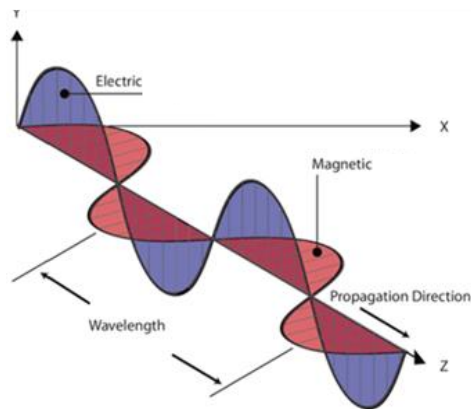
12. EXOGENOUS IMPACT OF ENDOGENOUS WORKING ELECTROMAGNETIC SYSTEMS

The Dutch Paradigm models the electron and the dodecahedron. The constructs result from interference of the free electric quant of the gamma-photon and the magnetic manifestation of the gamma-neutrino, following which both constructs exhibit a free magnetic quant, show 'mass' in common terms.

Both the gamma photon and gamma neutrino entered the physical space at the speed of light but did not yet manifest any mass at that threshold point. The restart of the magnetic compensation brings the entities in captivity of the adventures of their free electric quant.

The formation of the constructs is accompanied by the display of the new property 'mass'.

The photon's electromagnetic system shows this tracking behavior:



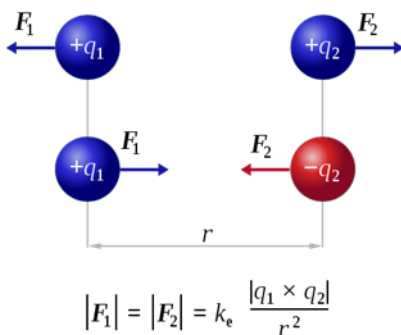
Once the respective electromagnetic systems became active again, each entity encountered electromagnetic activity from other entities in the same physical space.

An entity reacts to the free electric quant of another entity as and when it crosses the magnetic manifestation of its proper electromagnetic system. The electromagnetic system of an entity under interference absorbs the eventual lasting consequences of such interference. As a point in case, the electromagnetic system of a gamma-photon can flip into asymmetric behavior under lasting interference with the magnetic manifestation of a neutrino, which can result in the forming of an electron. Thereby the gamma-photon and gamma-neutrino become spatially interlocked within the newly formed construct electron. Moreover, the adaptation of the combined electromagnetic system induces the transfer of energy to newly formed free magnetic quants.

The effect of the asymmetric behavior of the electrical manifestation of the electron had a considerable exogenous impact on other electrons, more so than the impact of its newly released free magnetic quants. The asymmetrical manifestation exerts the Coulomb force.

This asymmetric electric manifestation of the electron was likely to cross the magnetic manifestation of other electrons. Eventually, this led to the forming of dodecahedrons. The strong Lorentz and Coulomb forces anchor the twelve electrons thereof into the newly formed extremely stable construct.

The Coulomb force defines the force exerted between two electric 'charges'.

Wikipedia:

The magnitude of the electrostatic force F between two point charges q_1 and q_2 is directly proportional to the product of the magnitudes of charges and inversely proportional to the square of the distance between them. Like charges repel each other, and opposite charges mutually attract.

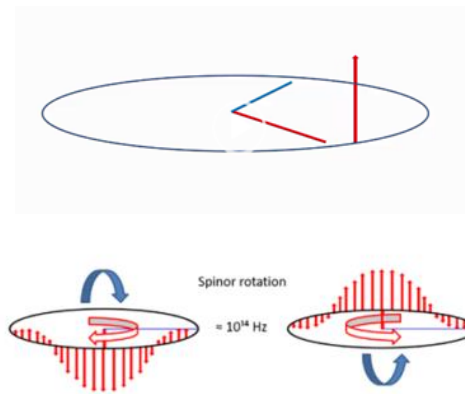
As per this equation, the Coulomb force has an infinite reach to impact other electric charges.

Regular science accepts that the repelling Coulomb force between electrons at large and zero distances do not follow the above equation. For that reason, the law has been adjusted by applying renormalization techniques that deny any extreme effects of infinite and zero mutual distance.

However, the Dutch Paradigm proclaims that the Coulomb force exerted by the electron works anisotropic since otherwise, the physical universe would most likely explode by the assumed mutually repelling isotropic Coulomb forces between electrons. Henri Poincaré was the first to raise this paradoxical question but focused on the

atomic scale. He mentioned the problem of the explosive nature of an electron with spatial extension.

As a reminder, this repelling Coulomb force was the root cause for the enormous expansion of the Big Bang. The same full electric charge drove the expansion that exogenously became active in the electron through the asymmetry of the electron's electromagnetic system of the gamma photon.



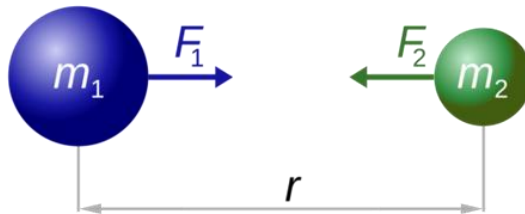
The anisotropic nature of the Coulomb-force is quasi-isotropic through oscillation, and the spinor rotation induces the mutual attraction to any nearby electron.

*The universe did not explode and will not explode due to these mutual Coulomb forces between electrons, which are alternately repelling and attracting at a frequency of **10^{14} Hz.***

The impact of the free magnetic quant is remarkable in character.

The energy content of this magnetic quant Δhf is only a tiny fraction of the free electric quant, and it exerts attractive force only.

The thinking about gravity started with the macrocosmic equation as formulated by Isaac Newton:



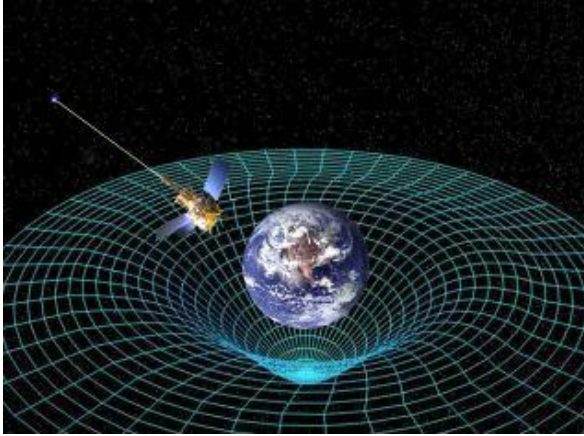
$$F_1 = F_2 = G \frac{m_1 \times m_2}{r^2}$$

The notion of mass was introduced with this equation.

Science cannot identify the carrier of mass at the subatomic level. The Newton equation works very well for practical application but hides the real root cause of the phenomenon. This equation has a problem when the two masses are linked to point particles or even tiny particles of whatever substance. A new phenomenon to handle this was identified as 'quantum gravity'. The origin of this quantum gravity is unclear.

It is unclear how an electron, or dodecahedron for that matter, can exert gravitational forces throughout the universe.

Finding the root cause for the overall effect of gravitational forces throughout the universe inspired Albert Einstein to formulate his theory of General Relativity. The basic assumption of this theory is that mass is the effect of the curvature of space-time.



NASA

However, this theory cannot apply to quantum physics, and this assumption is therefore flawed.

There is a firm belief that also gravity is quantized. The scientific search is focused on finding an explanation and theory of quantum gravity.

Candidates for quantum gravity are:

- String theory
- Loop Quantum Gravity
- Asymptotically Safe Gravity
- Emergent Gravity
- Causal Dynamical Triangulation

Many scientists have been scrutinizing these theories, but there is no clear consensus on the matter.

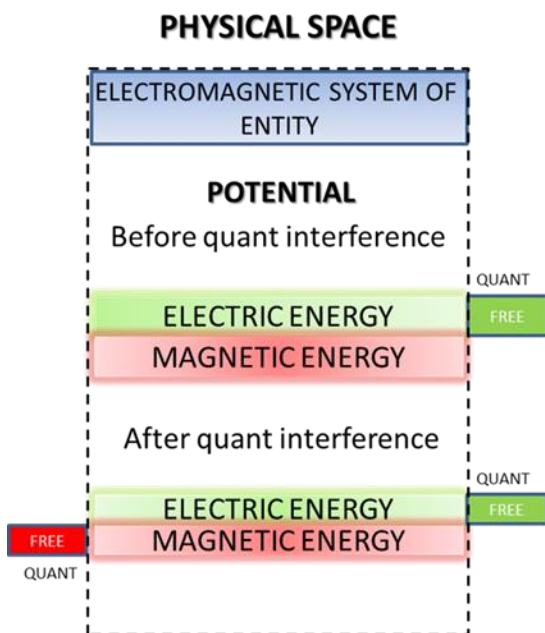
Isaac Newton assumed mass and gravitational force in his model to explain why solid objects fall to the ground. The more comprehensive application of the model clarified the movements of celestial bodies.

It is also remarkable that the equation for the strong Coulomb force and the weak gravitation has a similar structure as to Newton's gravitational model.

A significant problem in finding consensus is that the origin of mass itself is a nagging issue. Agreement on the source of mass is mandatory before progress is possible.

The origin and nature of “mass” is one of most intriguing mysteries of nature. The Dutch Paradigm unlocks this mystery.

The Dutch Paradigm has a conceptual model for ‘mass’



'Mass' is the energy equivalent of the free magnetic quant that manifests itself upon mutually interfering with an electrical quant of another entity. It is the endogenous effect of mutual interference between the electromagnetic systems of entities.

The question then is: *how does this free magnetic quant impact other constructs?*

The entity with a free electric and a free magnetic quant has to follow the behavior of respective its embedded electromagnetic system.

Having stated this, however, there is a significant difference in impact:

The free electric quant expands the physical space of the subject entity, whereas the free magnetic quant shrinks the allowable physical space

The free magnetic quant is omnidirectional and has no spinor functionality, unlike the electric quant.

A free magnetic quant always works in attracting mode and is endogenous. It is active irrespective of there being any other constructs in its vicinity having a free magnetic quant as well

Newton's gravitational law governs the mutual attraction between at least two bodies of mass for gravitational attraction. As for the free magnetic quant, it appears to have the exogenous quality of attracting other masses. Intuitively we reject this as realistic over extreme distances, and whatever we do with mathematical renormalization is counterintuitive again.

The Dutch Paradigm postulates that the compounding effect of the Coulomb force and the Newton gravitational force onto one another is not through the batch of attractive and repelling forces but by accumulating restrictive conditions for allowable physical space of entities in close vicinity. It accumulates endogenous effects of entities locked in an object that manifests exogenously via an impact on allowable space for further expansion or shrinking of objects.

Therefore:

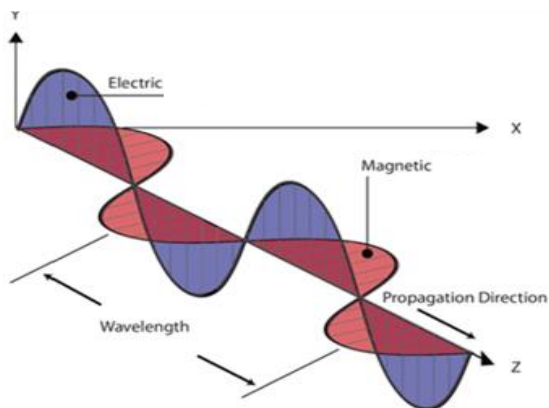
Newton's model and law describe the visualization of attractive forces, irrespective of space.

In essence, **the free magnetic quant restricts the spatial expansion of an entity in an object.**

The result is that accumulated free electric quants may increase the accessible physical space for the object - to move freely - but accumulated free magnetic quants counteract this and restrict this freedom to move.

Therefore, the object is subjected to two opposing effects in the occupation of surrounding space: the free electric quant for accelerated expansion and the free magnetic quant to restrict this expansion. It is the balance of these two effects that impact a free-floating object.

This accelerated expansion in space stopped for the naked photon because the free electric quant works bidirectional, and the resulting electric Coulomb force in the direction of propagation is 0.



It is remarkable that similar functionality is active in the electron at 10^{14} Hz with the oscillation and spinor action.

The magnetic quant will shrink the free available space for the entities' manifestations of free magnetic quants. The entities can be grouped in an electron or dodecahedron. This limitation of available space shrinks towards the center, what is known as the center of gravity.

Question: *Is the impact of the free magnetic quant localized?*

Apparently, it is. The free magnetic quant will shrink an entity's available space to become spatially locked into other electromagnetic manifestations. The entities can group into a naked electron or with twelve electrons in a dodecahedron. The restriction of allowable space intensifies towards the center of gravity.

It is restoring a tiny fraction of the missing magnetic compensation of the free electric quant. Before the Big Bang, there was a potential active electromagnetic system in a singularity.

Subsequently, there was a short period of free expansion of the naked entities through the repelling electric 'charge,' which ended after 1

Planck time by the reemergence of the magnetic compensation. That limited the electric charge to the free electric quant (hf) only and reduced the available space for the manifestations of an entity in a construct.

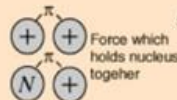
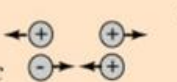
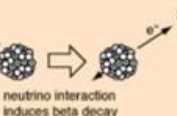
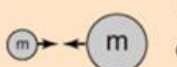
An entity locked up in a construct is further limited in expansion due to the vicinity of another construct.

Whenever entities are in close proximity to one another, the compounded restriction of available space for the object to move supersedes the possibilities for free electric quants to accelerate an object. The freedom to accelerate driven by the free electric quants weakens, and the free magnetic quants shrink the allowable space for expansion towards the center of gravity.

Therefore, the Newtonian gravitational force and the Coulomb force's free expansion of the object to accelerate through space may favor expansion or contraction. And there is a balance when these two effects are equal: no expansion and no contraction.

This 'shrinking' of free space happens wherever a free magnetic quant is available. The compounding effect triggers entities with a complimentary magnetic quant to accelerate towards each other, and it is an effect comparable with an implosion. This implosion will stop as soon as the stable construct meet and provide resistance to withstand further implosion.

The gravitational force or effect is the weakest per the nomenclature of regular science:

Fundamental Forces				
Strong		Strength 1	Range (m) 10^{-15} (diameter of a medium sized nucleus)	Particle gluons, π (nucleons)
Electro-magnetic		Strength $\frac{1}{137}$	Range (m) Infinite	Particle photon mass = 0 spin = 1
Weak		Strength 10^{-6}	Range (m) 10^{-18} (0.1% of the diameter of a proton)	Particle Intermediate vector bosons W^+ , W^- , Z_0 , mass > 80 GeV spin = 1
Gravity		Strength 6×10^{-39}	Range (m) Infinite	Particle graviton? mass = 0 spin = 2

The concept of contraction and expansion of the spatial freedom of constructs is also applicable to the Coulomb ‘force’. From the moment of Big Bang to the restart of the magnetic compensation, there was an unrestricted expansion into space initiated by the electric “charge.” This unconstrained drive reinstates in the electron but alternates through the oscillation in direction and has no lasting effect on an accelerated space requirement.

In summary, the Dutch Paradigm model explains that the phenomenon of gravitational forces and Coulomb force are the tangible effects of the contraction and expansion of the spatial freedom of constructs. Both have an endogenous character but expose a quasi-exogenous impact on shrinking and expanding required space for the constituent entities of constructs involved.

The model of The Dutch Paradigm has most of the goodies of the theory of General Relativity and is applicable down to the electron and dodecahedron in the subatomic world. It respects the Newton law but restricts it to practical application; it is not a fundamental law of

nature. The mentioned contracting and expanding phenomenon relate to ontological spatial objects, and therefore there is no problem with infinite values of variables as with point particles.

Remarkably, the electron and the dodecahedron have to grow in spatial extension as a construct while shrinking the physical space in which they exhibit their electromagnetic systems.

This Dutch Paradigm gravity model attempts to clarify the causality in what we observe in images of compounded exposure of some 10^{43} Planck times per image.

I expect more accurate calculations to be made, but the impact in order of magnitude is not significant.

The Dutch Paradigm allows mathematical verification of this gravity model. In doing so, I still follow the regular representation of forces.

For now, I'm counting on orders of magnitude.

It is then clear that the free magnetic quant has an energetic equivalent of the electric charge of an electron of the order of $\mathbf{h\Delta f/f=10^{-2}\times 4.135\cdot 10^{-15}\times 1.6\cdot 10^{-19}=6.6\cdot 10^{-36}}$, where the correction for the fine structure constant $\mathbf{1/137}$ follows. The order of magnitude relates to the table above for the gravitational value $\mathbf{5\cdot 10^{-38}}$ relative to $\mathbf{6\cdot 10^{-39}}$. I expect more accurate calculations to be made, but the impact in order of magnitude is not significant.

Some notes regarding this calculation:

1. For clarification of the arithmetic processing:

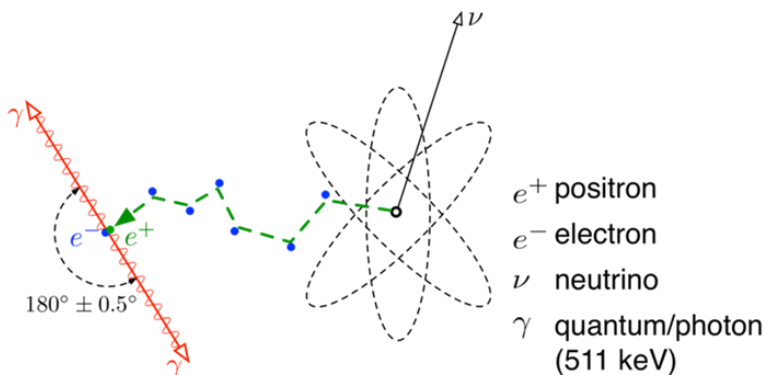
The $\mathbf{h=4.135\cdot 10^{-15}}$ eV/s, the $\mathbf{10^{-2}}$ is the percentage reduction of the frequency at the formation of the electron, the gamma frequency drops in

denominator and numerator and $1.6 \cdot 10^{-19}$ is the conversion from Joule to Coulomb .

2. I also refer here to the observation that the electric 'charge' of an electron monopolar has twice the value of the bipolar gamma photon version.
3. It seems that this factor of 2 has also regularly crept into the reported results with the LEP, Large Electron Positron collider and thus the results are misinterpreted.

In the LEP experiments, it is reported that a collision of an electron and positron produces two gamma photons, each with the energy of the electron.

LEP Geneva:



The mistake would then be that the actual value per gamma photon is half of the **511 keV**, the other component is then in the neutrino, but we can't measure that yet.

The conclusion is justified that both the logic and the calculation support the findings of The Dutch Paradigm.

The gravitational action and the electromagnetic action have the same source.

The next question is:

Question: when we have two protons nearby, what will be the dominant driver in further building up to more complex nuclei?

It is certainly not the tiny effect of spatial shrinkage of allowable space.

13. DARK MATTER

The 'electric charge' of a complex nucleus is active along three orthogonal axes. The sum of the vectors of the proton bonds is the actual exogenous exposure, the valence of the nucleus.

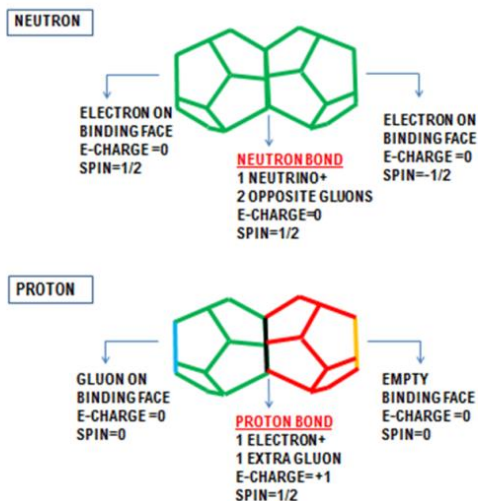
This implies that it is also feasible that proton bonds may compensate each other along their axis.

To the observer, it appears as if such mutually bonded protons are neutrons. As is known, the difference in 'mass manifestation' between twin dodecahedrons in proton or neutron configuration is minimal.

Neutron	939,565 MeV/c²
Proton	938,272 MeV/c²

In the first book of The Dutch Paradigm, I indicated that certain nuclei configurations are conceivable in which the proton bonds through mutual compensation have become electrically neutral to the environment. The resulting construct is in fact dark matter. See chapter 37. Neutron/Proton composites page 129.

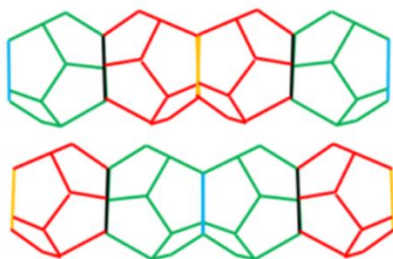
To understand the forming of dark matter, we take as the starting point the twin dodecahedron:



In a previous chapter is elucidated that forming dodecahedrons is plausible. The next step towards bonding into the twin dodecahedron structure is logically understandable as well. Such twin dodecahedrons form either a proton or a neutron.

The color of the faces indicates the occupancy, as declared in the prior figure.

Two protons can bond together in configurations as indicated below:



The protons in each of the above two configurations mutually share an inactive or weak binding face. Both proton bonds are permanently in opposition, and making said combinations exogenously neutral, the two protons must perform a spinor rotation in analogy to two electrons. Such a rotation in the forming phase of the dodecahedrons is possible only provided there is sufficient free space available to maneuver.

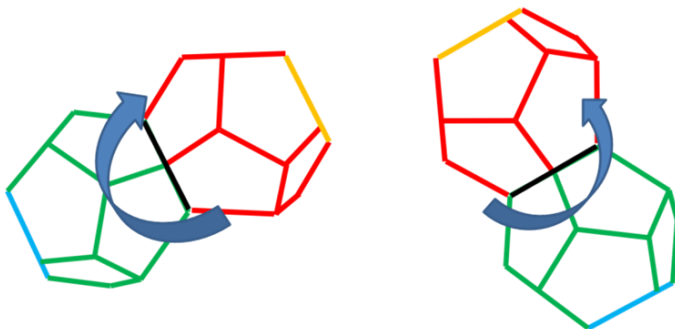
If room to maneuver is available, then the spinor rotation will occur.

The spinor rotation follows the principle that mutual attraction and bonding between protons occurs through rotational movement:



The illustration is for two bipolar magnets. Two monopolar magnets will act as the monopolar gravitational force, always in attracting mode. It is alike why two electrons interact as a Cooper pair under synchronization of oscillation.

If we display this phenomenon for two protons in an illustration, we see:

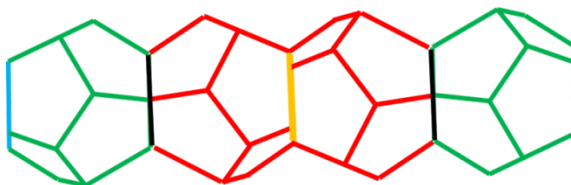


The resulting double proton configuration is dark matter.

The repulsion of the two naked protons is unstable, while the attraction of two protons is very stable.

For spinor action to occur, the relative orientation between two protons shall be from 180° to 0° .

The resultant combination of the two protons with opposite vectors of the proton bonds shows:



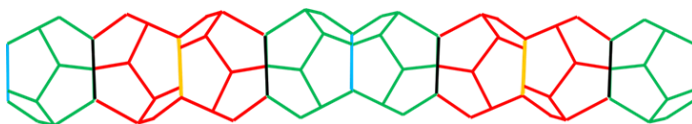
There is no need to change the face settings, no requirement to decay. The above dodecahedrons can form an exogenous electrically neutral proton pair without any further consequences.

Except that such a proton pair cannot evolve to an atomic construct anymore.

The smaller the angle for rotation, the greater the chance that there will be enough space to perform the spinor rotation.

The second designated dark matter configuration may follow the same pattern, and it depends on the relative position of the protons in which format the spinor acts.

The formation of dark matter is not an isolated act, and it is also conceivable that four protons compose themselves into dark matter.



The two dark matter configurations, as discussed, suggest a potentially widespread impact on early nucleation.

Early nucleation occurred when there was not enough free space yet around a proton to adopt the atomic structure

Dark matter may incorporate into the nucleus of heavier elements as well. The dark matter is then part of a nucleus that becomes electrically exogenously active with additional proton bonds.

The present scientific interpretation might assess dark matter as redundant neutrons and it will show up in an isotope and may or may not be fissile

The model of dark matter, as discussed above, reflects thinking in a 2D perspective single axis. But the same phenomenon of dark matter forming can also be reasoned from a 3D perspective, along three orthogonal axes. In short, countless possibilities for nucleation are possible.

Dark matter exposes its gravitational properties only, and its presence in isotopes may be confused as neutrons. Dark matter is most likely the natural plasm in the core of stars.

Calculations based on observations indicate that only 25% of the matter in the universe is observable, and it might be even less.

Visual perceptibility presupposes atomic composition, and what we see in the light is more an exception than the rule. Most 'matter' is not atomic

14. PHENOMENOLOGICAL CONSIDERATIONS: ONGOING INTERACTIONS WITHIN THE PHYSICAL UNIVERSE

Nowadays, we observe the physical universe with the impressive Hubble and soon to be Webb telescope. The sky is filled with galaxies and stars, and we study what is out there in more detail.

Wikipedia on Galaxies:



NASA

A galaxy is a gravitationally bound system of stars, stellar remnants, interstellar gas, dust, and dark matter. The word

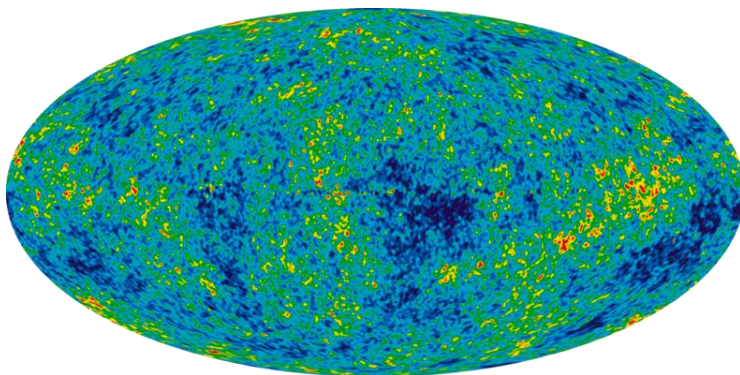
galaxy is derived from the Greek *galaxias* (γαλαξίας), literally "milky", a reference to the Milky Way. Galaxies range in size from dwarfs with just a few hundred million (10^8) stars to giants with one hundred trillion (10^{14}) stars, each orbiting its galaxy's center of mass.

Galaxies are categorized according to their visual morphology as elliptical, spiral, or irregular. Many galaxies are thought to have supermassive black holes at their centers. The Milky Way's central black hole, known as Sagittarius A*, has a mass four million times greater than the Sun. As of March 2016, GN-z11 is the oldest and most distant galaxy observed. It has a comoving distance of 32 billion light-years from Earth, and is seen as it existed just 400 million years after the Big Bang.

In 2021, data from NASA's New Horizons space probe was used to revise the previous estimate of 2 trillion galaxies down to roughly 200 billion galaxies (2×10^{11}). This followed a 2016 estimate that there were two trillion (2×10^{12}) or more galaxies in the observable universe, overall, as many as an estimated 1×10^{24} stars (more stars than all the grains of sand on planet Earth). Most of the galaxies are 1,000 to 100,000 parsecs in diameter (approximately 3,000 to 300,000 light years) and are separated by distances on the order of millions of parsecs (or megaparsecs). For comparison, the Milky Way has a diameter of at least 30,000 parsecs (100,000 ly) and is separated from the Andromeda Galaxy, its nearest large neighbor, by 780,000 parsecs (2.5 million ly.)

We look back in time and hope to see how it all started, but we cannot find the origin. We have to translate the observations we make

now to the origin of that observation as a picture back in time. The first glimpse of the physical universe that is actually observable is the cosmic microwave background.



We can observe and study in detail with precise instruments the building blocks of our physical world. Whilst indeed we made a lot of progress, we still cannot link our findings to a plausible origin. There is also no clear answer about how the world developed from its source into what we encounter in our day-to-day lives.

I need to rely on imagination and follow a distinct line of thinking from the very start of the physical universe. Thereby, I refer to notions and principles like chaos, strive for perfection, harmonization, struggle to expand, and dark matter.

Looking at the galaxies, stars, and planets, is it possible to further develop the concept of how self-assembly follows from the sequence of chaos? Thus far, this sequence is described for the neutron, the proton, and the dark matter of two protons.

I understand the concept of chaos, but what is perfection?

Aristotle distinguished in his book Delta of the Metaphysics three meanings or rather three concepts of what perfection entails:

- Something whole and complete – which contains all the requisite parts
- Something so good that nothing of the kind could be better
- Which has attained its purpose

‘Perfection is in the eye of the beholder’ and, therefore, it has a subjective connotation.

There is a philosophical debate on whether perfection can exist without some form of imperfection. Part of perfection is the ability to become even more perfect, and an integral part of perfection is to endure a moral imperfection to improve. Morality is thereby again subjective.

With this in mind, we can identify which imperfections are recognizable in what is described in the previous chapters. Also, how perfect these imperfections are to improve perfection. Because such an assessment is subjective, I have to mirror images and models derived from my thinking as a scientist. The application of logic can make assumptions plausible for a peer group.

Hopefully, this will happen and inspire people to adopt and develop this line of thinking further.

1. THE ENTITY BECOMES EXPOSED TO CHAOS AND PERFECTION

The entities emerged from a singularity wherein the respective electromagnetic systems were in a perfect potential state of mutual interference. This state could have lasted forever without any noticeable physical embodiment. The Big Bang shortly interrupted the magnetic compensation of the electromagnetic system.

Is this interruption a perfect imperfection?

This prompted me to envision what happened next. Do I see any further perfection of the individual entity? The entity may become an active member of a group. We as humans would not necessarily qualify this as an improvement. Before the Big Bang, the entities were all in the same singularity, but there was no mutual interaction. After the Big Bang, the entities chaotically mixed whilst the majority directly and perfectly grouped themselves into electrons and dodecahedrons. We can try to understand what may happen over a large timespan with these constructs. We can assess the sustainability of an electron and a proton over time. We try to do this as objectively as possible.

It might be understood if one conceives that imperfection starts a sequence of events in an ongoing improvement of perfection. Not measurable in metric values, but morally. One could say that we start a process as humans to improve the moral quality of objective assessment. We know that we have been naive with early 'objective' assessments as a group of humans. We model what we see and start verbalization in commonly accepted notions. The classical elements were assumed to be water, earth, air, and fire, but in the meanwhile, we have changed our minds and have a common understanding of what atomic elements are. The Earth was assumed to be flat, but it

turned out to be spherical. Also, we accept that the former concept was an 'objective' mistake.

Therefore, the group assessment is in objectivity time-bound.

The objectiveness is culturally inclined. The absolute truth and wisdom are not yet attainable. Our dual nature tries to find truth and wisdom, but the monistic world just does what it has to do based on conditions governed by step moves of 1 Planck length per 1 Planck time. The more details we observe, the more questions arise around the prevailing status of the objective wisdom of a scientific peer group.

Therefore, in The Dutch Paradigm, I accept the Big Bang and the interruption as an intentional imperfection of perfection and think about what happens with the entities involved.

I consistently start considerations relative to either a naked or constituent entity in a construct. In both conditions, the relevant entities manifest themselves by their free electrical quant, making space physical for these entities.

We have seen that out of chaos, gamma-photons and gamma-neutrinos merge into electrons. In the chaotic mix of electrons, single dodecahedrons can subsequently emerge whilst with their presence, causing another level of chaos in the mix of electrons, all in the struggle for the necessary spatial expansion to consolidate constructs.

The formation of the twin dodecahedron is only imposing a slight additional disturbance. The resulting construct is the neutron. Out of the neutron, the proton may emerge through β -decay. Protons allow additional dodecahedrons to bond on their end faces. It is another introduction of chaos out of which dark matter can emerge.

2. THE PRIMAL FORM OF DARK MATTER

Out of the chaos instigated by random β -decay of neutrons, protons result. The proton is exceptionally stable.

The protons can be mutually repulsive or turn via a spinor rotation into mutual attraction and form dark matter. The double proton dark matter construct acts exogenous like a double neutron but is more stable.

This form of dark matter is not unique and can incorporate in more complex nuclei as well.

Is dark matter another potential trigger for chaos?

3. BUILDING MORE COMPLEX NUCLEI

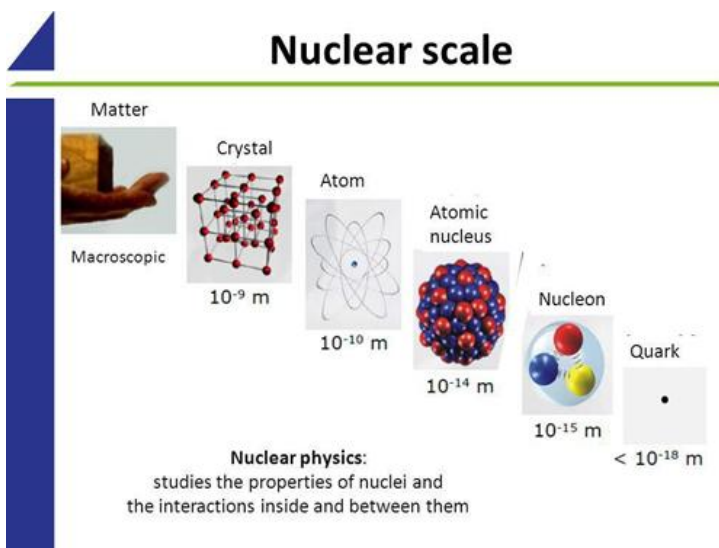
The twin dodecahedrons are building blocks to form more complex nuclei through clustering. If such complex nuclei encompass dark matter in addition to common neutrons, then the nuclei are still exogenously electrically neutral. 'Proton/neutron' clumps can form as nuclei in disguise. This form of binding preferentially happens at this stage of nuclei formation; there is simply no room for atomic formation in the struggle to expand and occupy surrounding space.

The spinor action is dominant

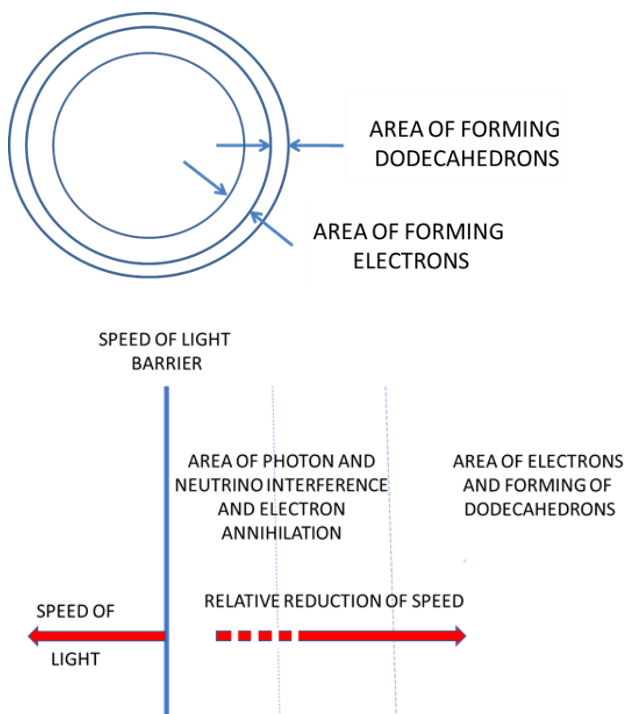
The clustering of dark matter requires only some additional surrounding space.

Clustering of dark matter is not associated with spatial development. Such is in sharp contrast with the atomic formation.

Atomic formation requires a lot of space. See the picture below.



The size of a complex nucleus is approximately 10^{-14} m relative to the electron shells of 10^{-10} m. The forming of atoms requires sufficient space around the nucleus to expand. Such free space around the nucleus was not available in the early stage of forming the physical universe.



Atoms form when the surrounding constructs become diluted in space. Free electrons will then establish the atomic formation and place themselves at a remote distance from their nucleus.

We, as humans, were unaware of dark matter and have focused on what happens with the visually observable atoms.

It is rather difficult to observe what one cannot see physically, but that secondarily shows its existence. That existence is derived evidence, but not metaphysical, and it is there.

Secondary evidence that presents itself in another physical way than we can observe with our senses might still be objective evidence.

15. DARK MATTER: A COINCIDENTAL FINDING

The true nature of dark matter is a big unresolved mystery in the universe. Scientists are trying to determine what exactly dark matter and dark energy is but have failed to come up with any coherent explanation hitherto.

The work done by The Dutch Paradigm unlocks these mysteries by sheer coincidence, as captured by the title of this chapter. The model for dark matter is a coincidental finding. The Dutch Paradigm did not envisage it upfront.

Dark matter consists of two protons bonded together in an electrical neutral construct or configuration.

An electrically neutral configuration results from spinor rotation of two protons whilst in close proximity to each other, resulting in what I will refer to as a combi-proton bond. As and when two protons are in such state and restricted in free available space, then they cannot widely expand and therefore are unable to form an atomic structure the atomic structure.

Phenomenological aspects are:

1. Dark matter is also made up of dodecahedrons.
2. A nucleus that only contains dark matter is electrically neutral. It cannot become atomic
3. Dark matter is cold plasma

4. An atomic nucleus may also incorporate combi-proton bonds, besides ordinary protons and neutrons
5. Note that the combi-proton bond in an atomic nucleus may be misconceived as being two neutrons
6. An atom of an element shows chemically the same properties irrespective of the presence of combi-proton bonds in its nucleus
7. An atom can have several combi-proton bonds in its nucleus
8. A nucleus with a combi-proton bonds is more stable than the variant with ordinary neutrons and protons
9. Dark matter can cluster without inter-binding
10. A cluster of dark matter exhibits an extremely high "mass" density

You can list aspects in this way, but why is there dark matter anyhow?

Immanuel Kant would answer: this question is irrelevant to nature. It is still monistic. It just happens.

But a dual-minded human is not satisfied with such an answer.

Is this dark matter phenomenon a new form of order amidst the chaos of nuclei formation?

Electrical neutrality precludes the primary dark matter from becoming atomic shielded by electrons. The dark matter nucleus is a

building block by itself. It is the third building block besides the proton and the neutron.

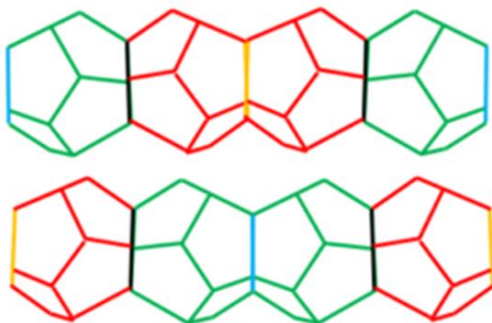
But when it is atomic in a more complex nucleus, what does dark matter bring to bear by replacing a neutron?

I want to be prudent, but it is compelling to extend our line of thinking towards the forming of stars and planets. Dark matter as a cold plasma might play a pivotal role in the forming of stars.

It is plausible that numerous dodecahedrons transformed into dark Deuterium and dark Tritium in the early development of the universe. Also, stars may have been formed by clustering of dark matter through mutual gravitational attraction undisturbed by Coulomb repulsion.

Dark Deuterium ${}^2\mathbf{H}$

Two possible configurations:



Dark matter as cold plasma has a high spatial density but nonetheless may still loosely clump together without bonding together. It

becomes a kind of a ‘liquid’ plasma soup that can further grow with adding more dark matter. At a critical value of clustering, nuclear fusion occurs. A star is born. The star then produces ${}^4\text{He}$ while ejecting gamma-photons.

Clouds of atoms around the star eventually form planets. Atoms by themselves form almost empty space, and therefore, planets have a far lower density than stars. To compare, the Sun has a medium density of $1,41.10^3 \text{kg/m}^3$ and our planet Earth $5,515.10^{-3} \text{kg/m}^3$.

This new concept of dark matter warrants new thinking of how stars and planets form

The starting assumption in the regularly accepted paradigm for star-formation is atomic Hydrogen. But, atomic Hydrogen has the lowest spatial density and must clump together out of an interstellar cloud with heavier atoms. Is it conceivable to think that the low-density Hydrogen atoms in such interstellar clouds could consolidate into a star?

The answer is no since it can be justified that non-atomic, dark matter is the key ingredient to form any and all stars amongst which our Sun.

There is ample knowledge available about galaxy formation and the life cycle of stars and planets. It is not part of this book to discuss the broader impact of dark matter as the ingredient to star formation.

But, it is plausible that dark matter as described is the principal instigator that allows star formation better than the atomic Hydrogen assumption.

The formation of stars out of dark matter could well provide the conditions to enable the next step in the self-assembly of more complex nuclei

16. IS DARK MATTER STABLE?

The answer to this question must be yes: there is much more dark matter in the universe than atomic matter. But the answer is somewhat more complex. Stability is subjectively linked to decay processes and not to upgrade to new levels of perfection. And such upgrading is possible and likely for a nucleus of dark matter.

Galaxies deploy within their structure a stronger gravitational attraction than expected. This phenomenon triggers the assumption that the cause might be 'dark matter'. This gravitational effect is the single property that is attributed to dark matter so far.

There is little doubt that there is dark matter. Nevertheless, we must be careful with notions like matter, dark matter, and gravitational attraction because these notions are not yet objectified within regular science. There is no consensus whether dark matter is densely packed in stars or resides in interspersed gas clouds in a galaxy. Dark matter is electrically neutral but not yet recognized as a constituent of the atomic structure.

The Dutch Paradigm has modeled dark matter. It can attain a high density equal to two twin dodecahedrons and has an equally intense gravitational pull per volume. It is plausible that stars consist predominantly out of dark matter.

Though dark matter is electrically neutral, it may still form an integral part of the atomic nucleus. Being electrical neutral means that dark matter, like the neutron, will not transform itself into an atomic structure even if there is sufficient spatial room.

The assumption that dark matter is present in gas clouds outside of stars is unlikely, and not supported by the models of The Dutch Paradigm

The accumulation of dark matter is in the stars themselves, not within the gas clouds. It is an additional but plausible deduction of The Dutch Paradigm, and oblivious to the contemporary scientific community.

Astrophysicists assume that the gravitational collecting of Hydrogen atoms forms stars. In such a model, the atoms need to be stripped to bare nuclei and compacted against the repelling Coulomb force. These conditions are required for nuclear fusion to start.

The dark matter model of the Dutch Paradigm for the formation of a star assumes that there are no electrons around the nuclei and no Coulomb force to overcome

The gravitational attraction and the dark matter density are per volume at maximum and allow the gravitational formation of the star without any constraints.

It is another self-assembly process those results in the forming of a star. The self-assembly acts through mutual gravitational attraction within a chaotic group of nuclei of dark matter

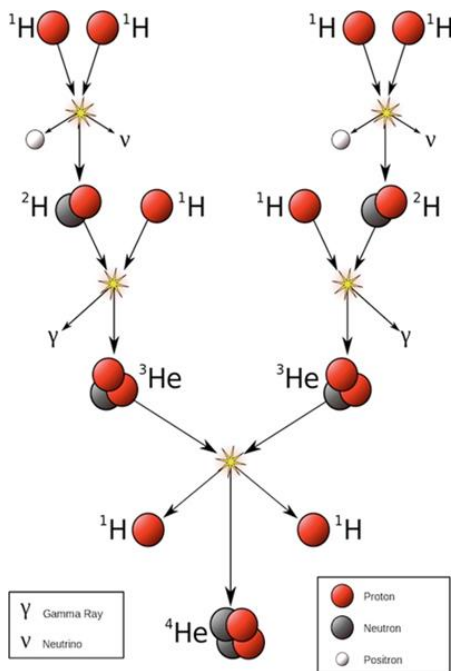
Once a star is formed, scientists assume that the Hydrogen proton, protium, is the fundamental actor for fusion.

Still, also this is an assumption that is difficult to accept.

The Sun is a star, and we have the scientific model of the proton-proton chain reaction that displays the fusion of Hydrogen to Helium.

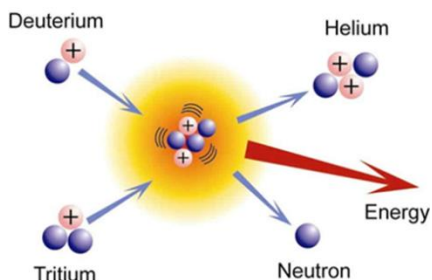
We emulate this process under earthly conditions to produce the Hydrogen bomb.

And that bomb works.



The fusion of two protons as a natural process has a half-life time estimated at **10^9 years**. The first step in the proton-proton chain, therefore, has no real meaning and certainly does not work for a Hydrogen bomb.

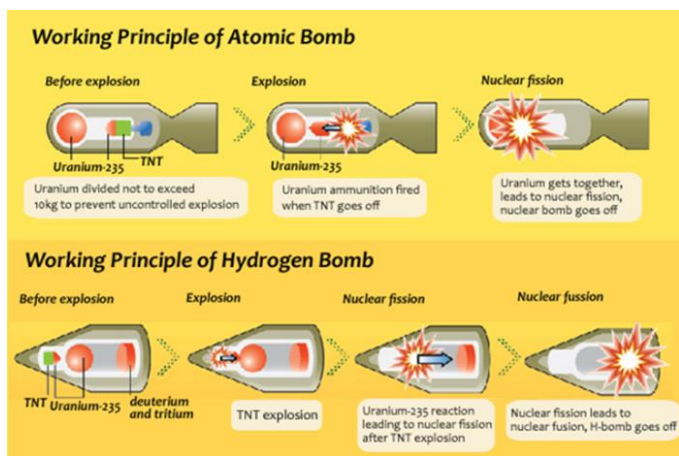
The assumed fusion process requires, as for the Hydrogen bomb, a massive compression of atoms. The atomic bomb acts as a compressor, and even so, the required fusion of atomic material is not Hydrogen but Deuterium, or Tritium.



Deuterium and Tritium are isotopes of Hydrogen. It means that there are one or two additional neutrons in the nucleus apart from the protium H.

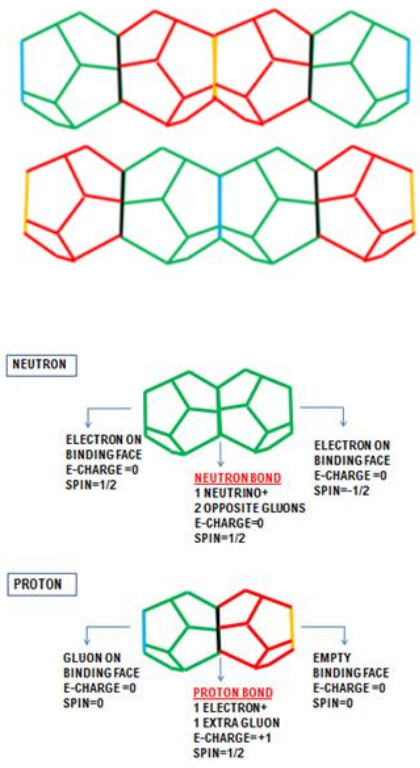
The H-bomb works, and therefore, there are more possibilities to induce fusion.

The regular idea is that the neutron acts as a spatial buffer between two mutually repelling protons. Though superfluous, the additional neutrons in the isotopes are necessary to initiate and continue the fusion process in a Hydrogen bomb.



The Sun thrives on nuclear fusion; therefore, dark Hydrogen must enable the fusion. But the composition of dark matter is still unknown in regular science.

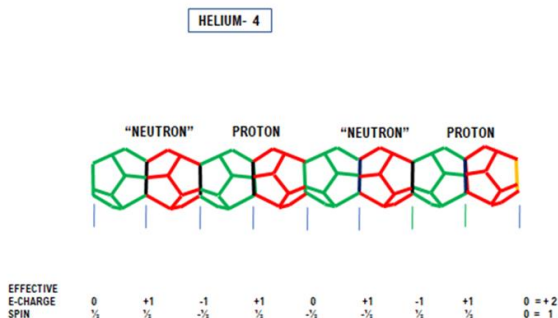
The Dutch Paradigm introduces the following two dark matter models:



As previously discussed, the two twin dodecahedrons merged through spinor action into dark matter. Extensions on such nuclei are possible with additional dodecahedrons, particularly on the two end faces.

Assuming that the result of the fusion is similar to the proton-proton chain reaction, we get ${}^4\text{He}$.

A possible configuration as previously discussed:



The logic then indicates that when two twin dodecahedrons of dark matter fuse into four protons as with ${}^4\text{He}$, two neutrons transfer into protons. This reduces the energy content with $2*(939,56-938,27)\text{MeV}/c^2 = 1,29 \text{ MeV}/c^2$. The result is (part of) the fusion energy.

There are more possibilities to configure ${}^4\text{He}$, which differ in stability.

There are several intermediate steps imaginable from dark matter to ${}^4\text{He}$. Crucial is that two additional proton bonds need to emerge with equal pointing vectors. Particularly when two blue faces, each having a gluon (=gamma-photon), merge and a neutrino is captured, a proton bond will establish, included opposite oscillation of the two merged dodecahedrons. The intermediate steps will have a short half-life, and only ${}^3\text{He}$ and ${}^4\text{He}$ are stable.

Provided the required conditions are available within the star, this is another self-assembly process, and fusion will start.

The list of isotopes of Helium is impressive:

List of isotopes [\[edit \]](#)

Nuclide ^[a]	Z	N	Isotopic mass (Da) ^[7] [ⁿ 1]	Half-life [resonance width]	Decay mode [ⁿ 2]	Daughter isotope [ⁿ 3]	Spin and parity [ⁿ 4][ⁿ 5]	Natural abundance (mole fraction)	
								Normal proportion	Range of variation
² He ^[n 6]	2	0	2.015894(2)	$\ll 10^{-9}$ s ^[8]	p (>99.99%) β^+ (<0.01%)	2 ¹ H ² H	0+#		
³ He ^[n 7]	2	1	3.01602932265(22)		Stable ^[n 8]		1/2+	1.34(3) × 10 ⁻⁶	4.6 × 10 ⁻¹⁰ –4.1 × 10 ⁻⁵
⁴ He ^[n 7]	2	2	4.00260325413(6)		Stable		0+	0.99999866(3)	0.999959-1
⁵ He	2	3	5.012057(21)	700(30) × 10 ⁻²⁴ s	n	⁴ He	3/2-		
⁶ He ^[n 9]	2	4	6.01888589(6)	806.92(24) ms	β^- (99.99%) β^-, α (2.8 × 10 ⁻⁴ %)	⁶ Li ⁴ He, ² H	0+		
⁷ He	2	5	7.027991(8)	2.51(7) × 10 ⁻²¹ s [159(28) keV]	n	⁶ He	(3/2)-		
⁸ He ^[n 10]	2	6	8.03393439(10)	119.1(12) ms	β^- (83%) β^-, n (16.1%) $\beta^-, fission$ (0.9%)	⁸ Li ⁷ Li ⁵ He, ³ H	0+		
⁹ He	2	7	9.04395(5)	2.5(23) × 10 ⁻²¹ s	n	⁸ He	1/2+#		
¹⁰ He	2	8	10.05282(10)	3.1(20) × 10 ⁻²¹ s	2n	⁸ He	0+		

1. [^] () – Uncertainty (1 σ) is given in concise form in parentheses after the corresponding last digits.

2. [^] Modes of decay:

n: Neutron emission

p: Proton emission

3. [^] **Bold symbol** as daughter – Daughter product is stable.

4. [^] () spin value – Indicates spin with weak assignment arguments.

5. [^] # – Values marked # are not purely derived from experimental data, but at least partly from trends of neighboring nuclides (TNN).

6. [^] Intermediate in the proton–proton chain reaction

7. [^] ^a ^b Produced during Big Bang nucleosynthesis

8. [^] This and ¹H are the only stable nuclides with more protons than neutrons

9. [^] Has 2 halo neutrons

10. [^] Has 4 halo neutrons

- The isotopic composition refers to that in air.

It needs an in-depth study to simulate the different and possible outcomes. It is noticeable that there might be variants in ⁴He relative to the amount of dark matter in the stable nucleus. Maybe opposite

pointing proton bonds are broken or still active and not noticeable towards properties of ${}^4\text{He}$ in the atomic structure.

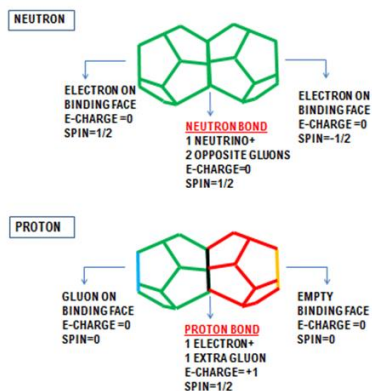
Therefore, the answer on whether dark matter is stable is that it will not decay to a lower form of composition in parts

Under preservation of the structure, it can modify the valence of a complex nucleus

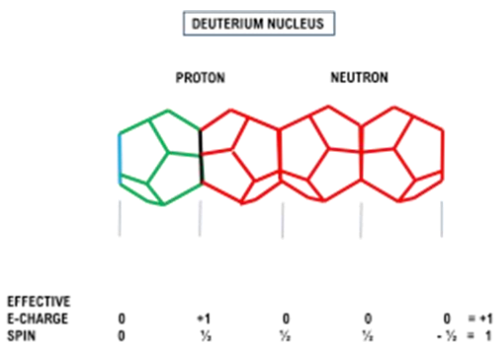
17. DO WE KNOW HOW SPECIAL THE NEUTRON IS?

We are familiar with the neutron and the proton being the building blocks that make up the nucleus.

The Dutch Paradigm modeled these two constructs as:



The twin dodecahedrons in the following figure compose the nucleus of a Deuterium ^2H atom as has been positively validated by The Dutch Paradigm.

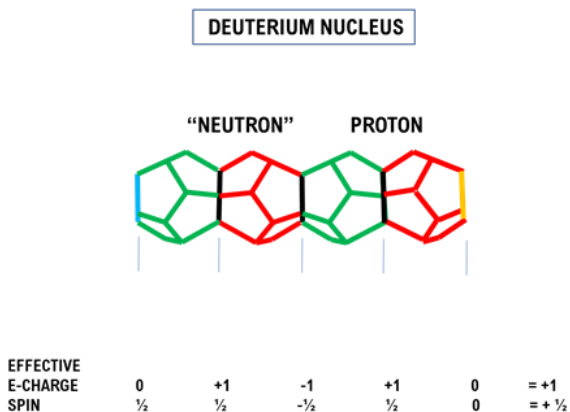


But: why should Hydrogen have an isotope variant like Deuterium?

Deuterium is a stable isotope, also known as heavy Hydrogen. It is present in the oceans in a ratio of 6420 to 1 in favor of Hydrogen.

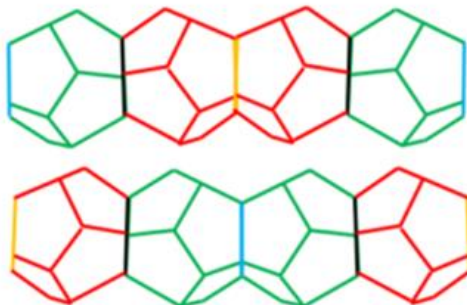
The traditional assumption is that a neutron prevents the decay of a nucleus having at least two protons. But ${}^2\text{H}$ has only one proton and is already exceptionally stable. An additional neutron seems to be dysfunctional. The additional neutron does not impact the stability of the Deuterium nucleus, which is odd because a naked neutron has, under earthly conditions, β -decay in minutes. There is no apparent reason why the neutron within this configuration would not decay. If that would happen, the result could be either dark matter or two ${}^1\text{H}$ nuclei.

Another configuration for the Deuterium with dark matter might be:



Such a configuration would entail the existence of dark matter in the nucleus since there are three proton bonds in this configuration, but the exogenous valence is still 1. It might be that there are indeed more isotopes of Hydrogen with the same exogenous properties, also containing dark matter.

We have already identified electrically neutral dark matter:



As for Deuterium, we might have an electrically active nucleus that also contains dark matter. Such a nucleus makes the atom Deuterium very stable because β -decay is not feasible.

Dark matter may indeed ontologically be present in the more complex nuclei. It is a feasible option.

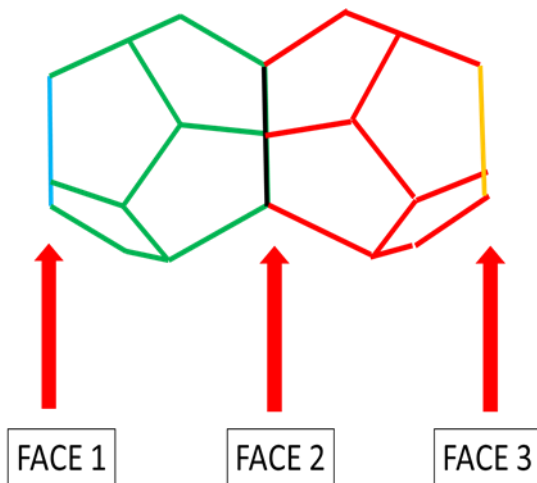
Therefore, it is plausible that there are more degrees of freedom to assemble complex nuclei, even within the elements' definitions, characteristics, and properties, as mentioned in the Periodic Table of Elements.

For Hydrogen, we already identified ^1H Hydrogen, ^2H Deuterium, and ^3H Tritium. A triplet of oddities for an element that is just at the start of the ranking in the Periodic Table of Elements.

More to come?

We need to rethink the function of the neutron within a nucleus.

The Dutch Paradigm allows various settings for the end faces of the proton. As a reminder, the result for the β -decay of a naked neutron is a proton:



Face 1: Only a gamma-photon is in orbit in this face.

The neutrino ejects at β -decay. Therefore there is only one gamma-photon left in face 1. The electric manifestation of this photon returns in the symmetric mode. The resulting spin on this face is 0.

Face 3: This face is empty.

During β -decay the electron in this face is ejected. The resulting spin in this plane is 0, and there is no electric manifestation anymore.

Face 2: This binding face is referred to as the proton bond.

There is one electron in that binding face in addition to one gamma-photon, which originates from the neutron bond.

Faces 1 and 3 allow for the assembly of a more complex nucleus without altering the prime properties of the proton.

The proton has active faces 1 and 3, allowing further extension with neutrons or dark matter combi-protons. Neutrons themselves have great difficulty forming combi-neutrons because both end faces of a neutron have an electron that will not allow electrical neutral docking and binding of another neutron.

Therefore,

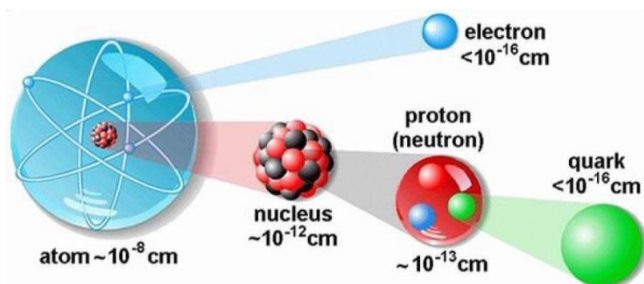
If we have isotopes in the Periodic Table of Elements that have more than the number of neutrons as protons, they will most likely indicate that dark matter is part of the nucleus of such isotopes

18. THE ATOMIC STRUCTURE IS A NEW LEVEL OF PERFECTION

In our earthly habitat, we live in a physical world full of atoms. Our physical body consists of atoms. We observe the atoms, with their nuclei shielded by electrons and unobservable for the human eye. More complex nuclei even have several layers of electron shells. For humans, the atomic structure is the common denominator to identify 'matter'. We assess atoms as solid.

But, it is questionable whether the atom is the dominant structure on a cosmic scale.

The atomic structures take up collectively enormous spatial volume requiring the necessary volume around the nuclei:



For instance, the volume of an atom **H** is about fifteen orders of magnitude larger than the volume of the nucleus. The respective properties of the electrons and nuclei exert their mutual effect over a substantial distance relative to one another whilst stably held together through Coulomb forces.

As previously discussed, according to The Dutch Paradigm, for the dodecahedrons to expand and assume the required volume for its geometric structure was indeed a struggle for space. There was

intense competition between dodecahedrons in this regard. In fact, in a way, the lack of space also facilitated the formation of twin dodecahedrons and dark matter configurations.

In such congestion of dodecahedrons in cramped space, it was not feasible for the atomic structure to establish themselves.

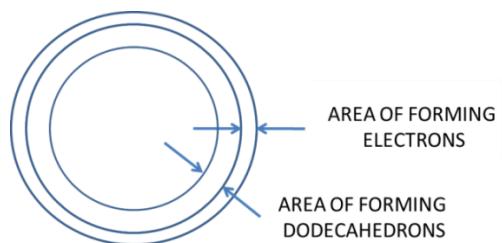
The atomic structure emerges under specific conditions:

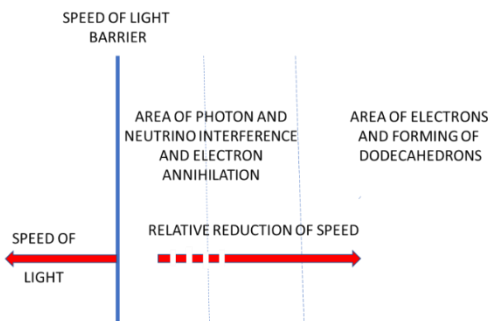
1. A stable nucleus
2. Active with an electric charge
3. Present in an almost empty space
4. Electrons nearby or released through β -decay

These conditions were not yet present at the very beginning of the physical universe.

Under the early restricted spatial conditions, the dodecahedrons clumped together to dark matter as well as to some more complex nuclei of the elements as categorized in the Periodic Table of Elements.

As the universe expanded rapidly, the mass contents spread out in the ever-increasing volume of space. The conditions necessary to create the atomic structure have evolved over time.



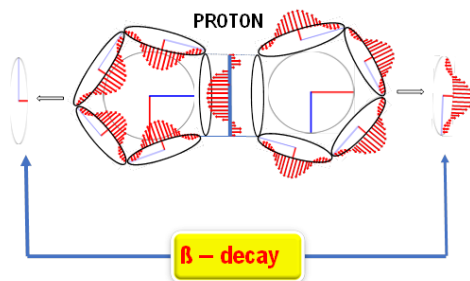


The dodecahedron is the centerpiece in all these turbulent conditions, and it had to be an extremely stable construct to survive, both in single- or twin- dodecahedron structure. Even under conditions of β -decay, the twin dodecahedron structure will remain intact.

The first suitable conditions for dodecahedrons to transform into atomic structures arise when neutrons are in β -decay.

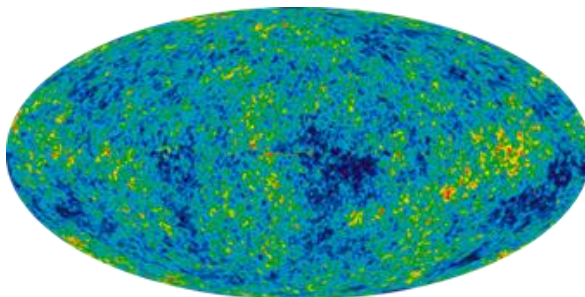
A neutron has under earthly conditions of cosmic background radiation a half-life of fewer than 20 minutes for β -decay. When the neutron experiences β -decay in earthly ambient conditions, forming the atomic structure is almost inevitable.

As soon as there is just after the Big Bang enough space to expand, the atomic structure of a Hydrogen atom will emerge, and it is the start of a new type of construct, the atom **H**.



The Hydrogen atom is the first sizeable object in space to reflect visible light. Not just visible light, but all electromagnetic radiation that can interfere with the electron in orbit around the nucleus.

It might well be that what we see as the cosmic background



NASA

is the end of the first short era of the physical universe and the start of a long period in which stars will be made.

To recapitulate, the sequence in forming constructs is:

Electron

--- Dodecahedron

--- Twin dodecahedron

--- Dark matter

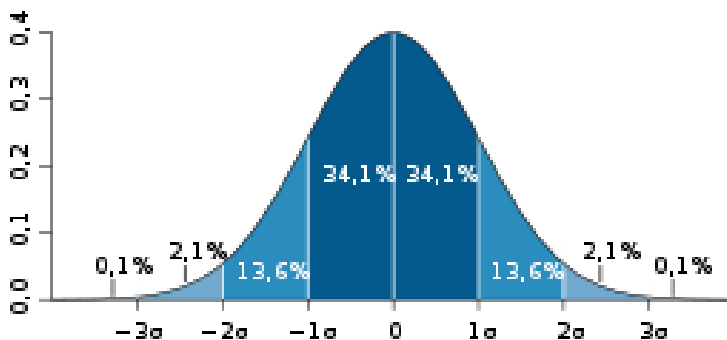
--- Neutron β -decay

--- Atomic structure

Each of the constructs mentioned above requires room to expand. While the spherical perimeter of the universe expands at the speed of

light, each new construct strives to reduce in speed until reaching its kinetic rest speed.

There is a set of optimum conditions for the forming of each construct. The production of constructs will follow a statistical curve.



Electron

Single dodecahedron

Twin dodecahedron

Proton/neutron

Dark matter

Neutron

Proton via β -decay

Atomic structure

Throughout all cyclic periods of chaos and perfection, there is chaotic interference with gamma-photons and gamma-neutrinos.

All these early events happen in the spatially expanding densely occupied layer bordered outwards by the spherical perimeter of the expanding universe and inwards by the newly formed constructs, striving to exchange kinetic energy to reduce speed to their kinetic

rest speed. This couple of overlapping layers acts as the incubator of any and all constructs that becomes the building blocks for the formation of stars.

Protons were at first predominantly configured in the dark matter arrangement.

The dark matter accumulates under gravitational attraction – or local shrinking of space as discussed previously – and form enormous, dense clumps, ultimately becoming stars. Stars eventually bring the dark matter, neutrons, and gamma-photons to fusion and build more complex nuclei.

Whenever possible, due to more space coming available to expand, β -decay could deliver protons for which atomic structuring is possible and, therefore, atomic Hydrogen, Deuterium, Tritium, and Helium could form as well.

When a star dies, the formed more complex nuclei within the dying star become dispersed in space and adopt the atomic structure by capturing electrons in electron shells.

Therefore, the atomic structure - beyond doubt for more complex nuclei - is a new and considerable later phase in arranging entities

19. MORE COMPLEX NUCLEI: FUSION AND FISSION, NEXT STEPS IN SELF-ASSEMBLY?

As stated in previous chapters, the Dutch Paradigm proclaims that only two types of entities emerged out of the singularity into the physical universe immediately following the Big Bang. These entities identify themselves through the manifestations of their respective free electric quant and reactive electromagnetic system. The electromagnetic manifestation of the free electric quant makes consecutive step moves of 1 Planck length in 1 Planck time in the direction perpendicular to propagation. Such free electric quanta may randomly encounter free electric quanta and the reactive electromagnetic systems of other entities.

From a phenomenological viewpoint, the entities entered the physical space in perfection and as unity in diversity. The event known as the Big Bang itself represents the perfect imperfection as part of breaking up a singular perfect system into multiple but similar entities.

After the first Planck period, the free electric quanta became active perpendicular to the entity's direction of propagation. Beyond that threshold and within the common shared physical space began the first round of mutual interferences between other free electric quanta and their reactive electromagnetic tracking systems.

Out of this chaos, the electron emerged in vast quantities as a gamma-photon and a gamma-neutrino construct. Mainstream science is oblivious to this concept and seems steadfast in upholding its belief that the electron is an elementary point particle.

After the formation of electrons, again a chaotic mix resulted in the formation of more complex constructs in the geometric structure of a dodecahedron, each made up of twelve electrons.

Two dodecahedrons can merge into a twin dodecahedron and become either a neutron or a proton.

In this process of dodecahedron formation, the free electric quants of the constituent electrons had to adapt themselves to preserve their respective manifestations at the speed of light.

This sequence follows a pattern whereby every step leads from chaos into another level of perfection at a higher degree of complexity. The said adaptation induces a transfer of energy from a free electric quant to a free magnetic quant. The free magnetic quant reflects the gravitational mass manifestation of the construct.

Each step from perfection to chaos and a higher degree of perfection shows that the process to higher levels of complexity can be perceived as plausible within the spatial constraints of self-assembly.

In this explanation, we now have entered the era of star formation. Though this is a new field of scientific considerations, I expect that this will be governed by similar first principles as elucidated so far. It is as if a perfect state of complexity is subjected to another state of chaos out of which a new form of higher complexity arises.

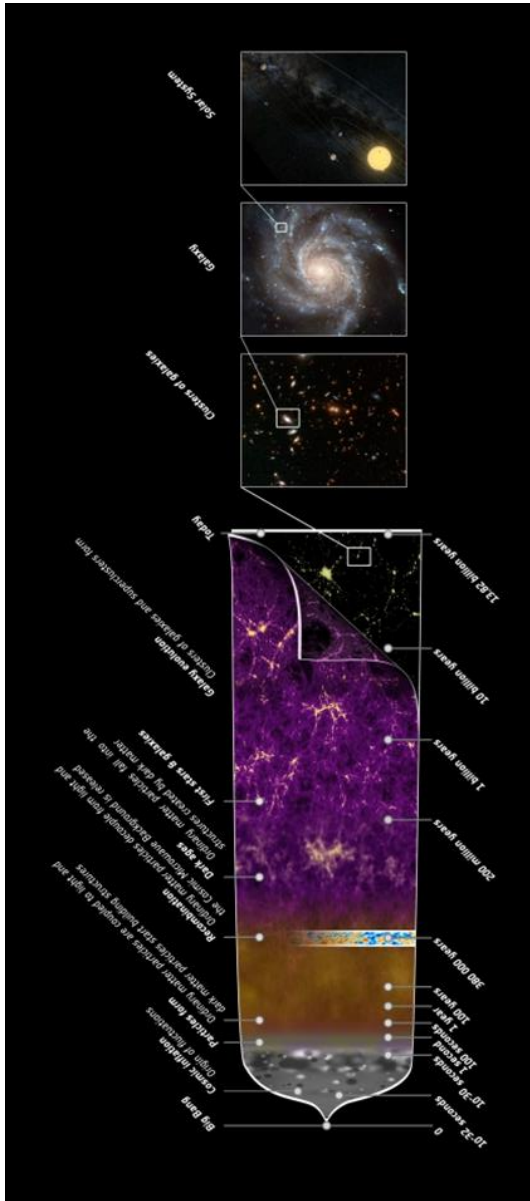
It is fascinating to study how stars can be formed by densifying and consolidating dark matter, then starting fusion in plasma and eventually emitting light as per the visible part of the electromagnetic spectrum. More complex nuclei will emerge that, when spatially possible, assume the atomic structure and spread through space over time, forming the planets through densification and consolidation.

However, this book does not intend to detail fusion and fission processes in stars and galaxies nor on the emergence and distribution of heavier atoms throughout the universe. But, it is plausible that stars were composed out of dark matter, clumping together through gravitational attraction and eventually delivering complex elements that form planets.

We may recognize certain aspects of these processes in our earthly environment.

For instance, the forming of isotopes by neutron capture and subsequent β -decay provides insight into how the more complex nuclei that we know may have been formed.

But first, we need to mirror The Dutch Paradigm line of thinking against the prevailing scientific consensus on the formation and evolution of the universe.



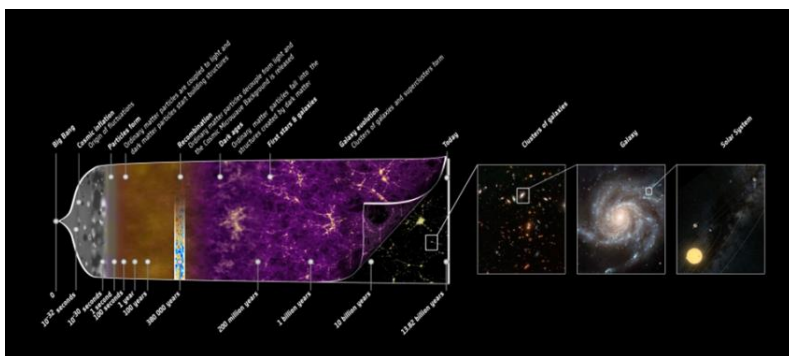
20. SCIENTIFIC CONSENSUS ON THE FORMATION AND EVOLUTION OF THE UNIVERSE?

In the context of this book, it is worthwhile to mirror the Dutch Paradigm findings on the evolution of the universe against the scientific consensus thereof.

The Hubble telescope allowed for spectacularly detailed observations of the universe. These observations can make or break theories, provided we can understand what the observations reveal.

It is paramount that we distill information from these observations to help validate the prevailing theories on this subject.

The available information is presented into an overview of events - typically on a time scale- as depicted in the illustration below and opposite page:

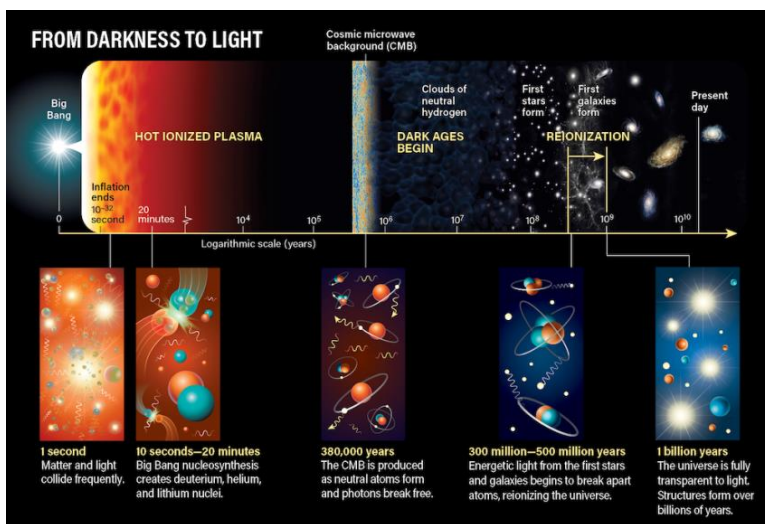


It is challenging to present evolutionary events of the universe schematically without inserting a risk of misinterpretation. The above schematic illustrated thinking reflects the consensus of contemporary science, refreshed with the Hubble information. The newly acquired

visual information reflects events in the past that arrived with coherent photonic information at the Hubble in our present time. There are many more of such representations, and they are certainly not all alike.

Notions are mentioned like “ordinary matter” and “ordinary matter decouple from light” and dark ages and dark matter. However, it is prudent to state that there is no stable scientific consensus about what happened from the moment of the Big Bang up to the formations of the first stars.

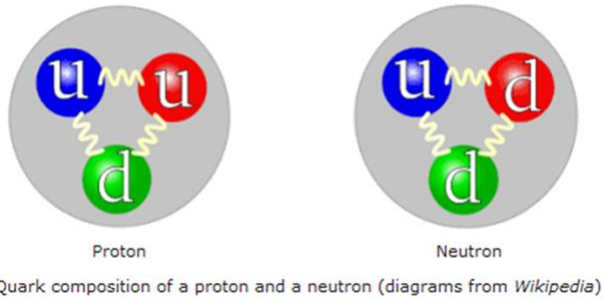
Another recent illustration is in Astronomy of January 2021:



Astronomy is a magazine for hobby astronomers; it draws its information from well-respected scientific sources.

Also here, matter is mentioned as something having been conceived at the Big Bang. But it remains unclear what matter is all about or what we expect it to be.

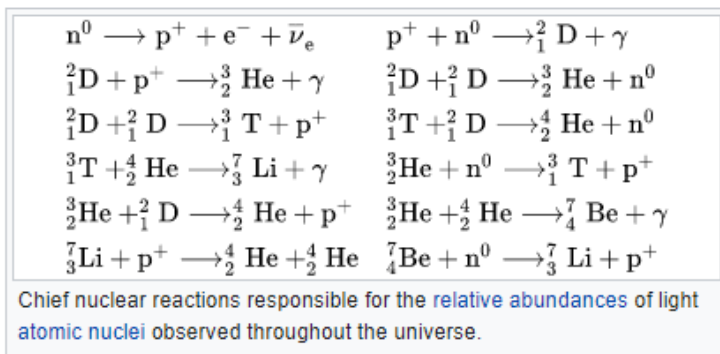
The formation of neutrons and protons is only a sketchy reflection of ideas of how matter came into being:



Light is represented as a wave:



and the process to form deuterium, helium, and lithium reflects the Big Bang nucleosynthesis.



The Big Bang nucleosynthesis ended after some 100 – 300 seconds after the Big Bang.

There is no mention of dark matter in the above illustration.

The nucleosynthesis resumes as Stellar nucleosynthesis after some 300 – 500 million years. Prior to forming stars is a cooling down period in which the nuclei out of the Big Bang nucleosynthesis could attain the atomic structure. So, the assumption is inherent that while the early fusion was based on hot ionized plasma, stars are formed based on cold atomic constructs.

The two illustrations of the evolution of the universe reflect a mélange of theoretical inputs that lack internal coherence, making it difficult to mirror the models of The Dutch Paradigm with astrophysics

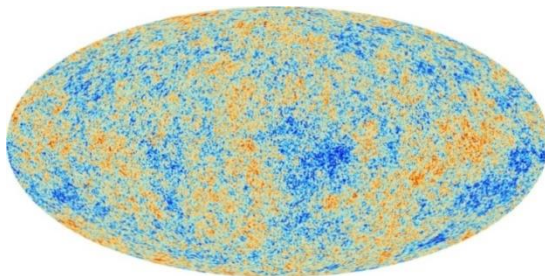
This brings the question: what is the purpose of such confusing illustrations?

Is it a historical timeline that indicates contemporary consensus on the phases of development of ‘matter and light’? Does it display the position of the human being in time and place? Or is it a kaleidoscope

of all ideas on this development, in a mix of hard evidence by observation and imagination without proper consensus on ontological evidence?

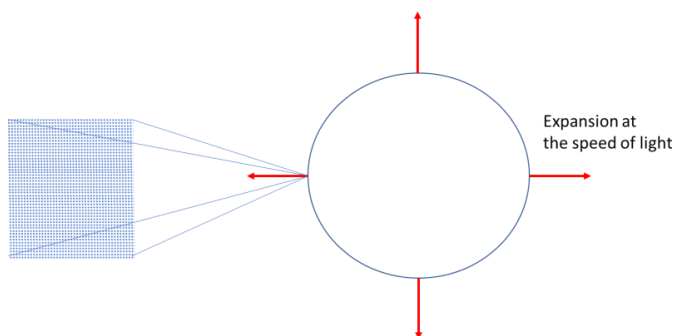
The illustrations are simplified, and most likely aim to inform about the factual spherical observations of the Hubble and Planck satellite telescope translated to an assumed point of origin of the Big Bang. But the first visible reflection of the Big Bang is the Cosmic Microwave Background.

The visualization for this CMB is:



ESA Planck satellite

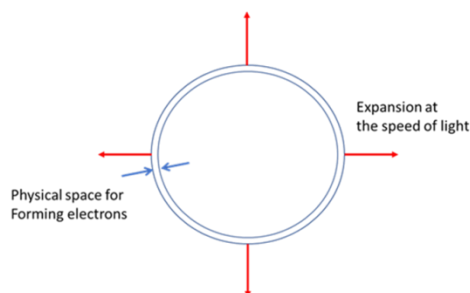
The Cosmic Microwave Background fills all space, so it is observed all around the Planck satellite.



The illustrations as per The Dutch Paradigm start with an illustration showing the situation immediately after the Big Bang when gamma-photons and gamma-neutrinos emerged, representing the physical universe's perceptible start. These entities are observable through the respective manifestation of their free electric quant and electromagnetic system. The free electric quants started to interfere with whatever crossed their path from that moment on.

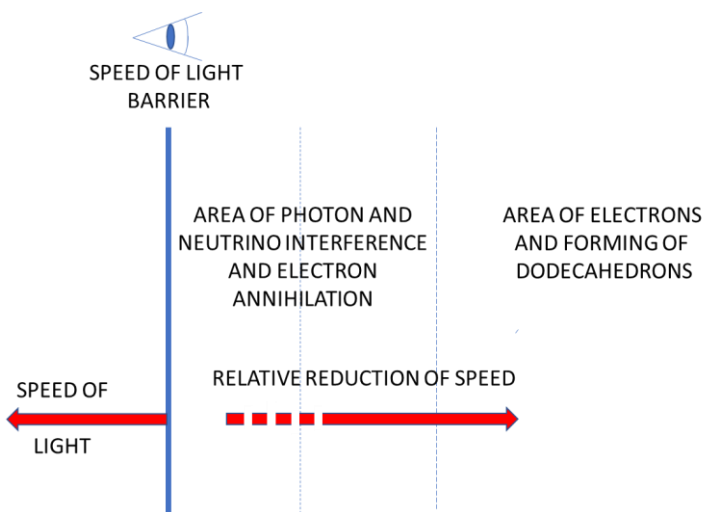
The first period of lasting interference formed the electron(s) as a construct of a gamma-photon and gamma-neutrino. In that formation process, the electron inclines to reduce its speed relative to the speed of light to its kinetic rest speed. Not yet able to transfer the appropriate amount of energy, this will result in endogenous storage of the kinetic energy in the electromagnetic systems of the constituents of the electron.

This speed reduction is illustrated by:

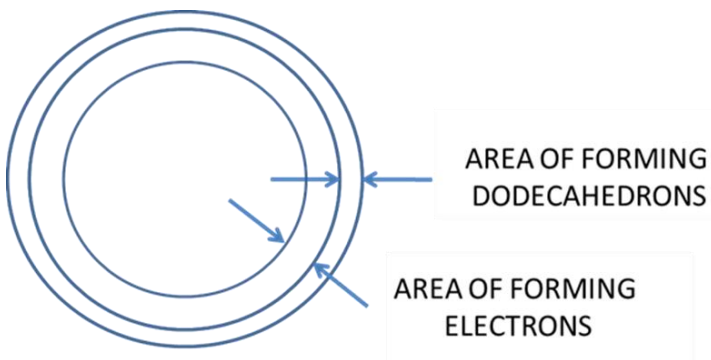


In the following steps, electrons composed themselves into the special configuration of dodecahedrons which themselves are made up of 12 electrons each.

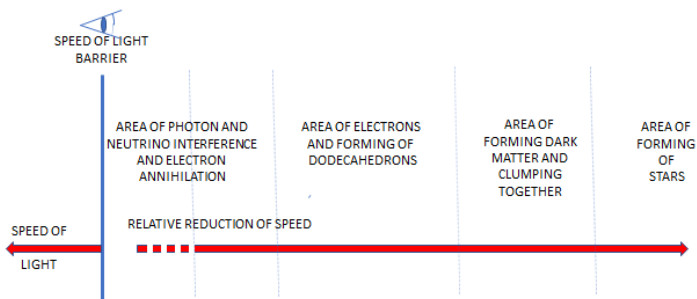
Seen from the speed of light as the absolute speed barrier, this was illustrated as



And in the spherical illustration:



And subsequently this can be extended to:

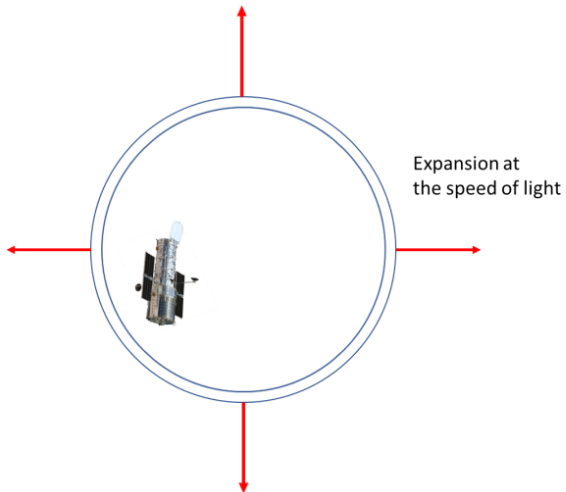


The planet Earth is at a relatively close distance to the Sun. Its current position must be somewhere between the point of origin of The Big Bang and the outer perimeter of the ever-expanding Cosmic Microwave Background. In fact, the CMB is not a background but reminiscent of the gamma-photons and gamma-neutrinos that are still propagating away from point of the origin at the speed of light.

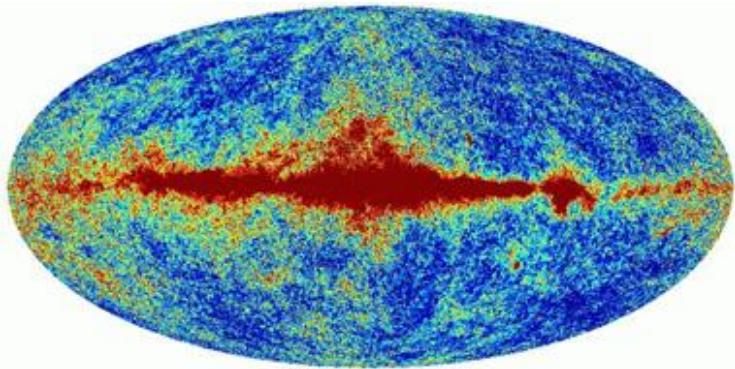
We are somewhere in between.

So, when we look at the Cosmic Background Radiation, we look into what we are not part of anymore, our speed reduced relative to the point of origin. With the kinetic rest speed of the dodecahedrons of 0 C , we are still losing speed relative to the speed at which the universe expands i.e. the speed of light. Therefore, from our perspective, it is as if the universe is accelerating in expansion, while in fact, we are reducing speed relative to the barrier of the speed of light.

If we then make spherical observations with our satellites and Hubble telescope and see the Cosmic Microwave Background, we are within the perimeter of the gamma-photons and gamma- neutrinos.



Also the Wilkinson Microwave Anisotropy (WMAP) probe indicates such a position:



I realize that this simple reasoning does not grant thankful credit to all the scientists who have devoted their work to providing humankind with information about where we are and how we arrived at that position.

It is warranted to check the hidden assumptions of present scientific thinking and interpretations on this topic against the insights input that The Dutch Paradigm provides

21. NEUTRON CAPTURE

In our earthly environment, we identified as from 1869 many different elements, and together they constitute the Periodic Table of Elements nowadays.

Periodic Table of the Elements

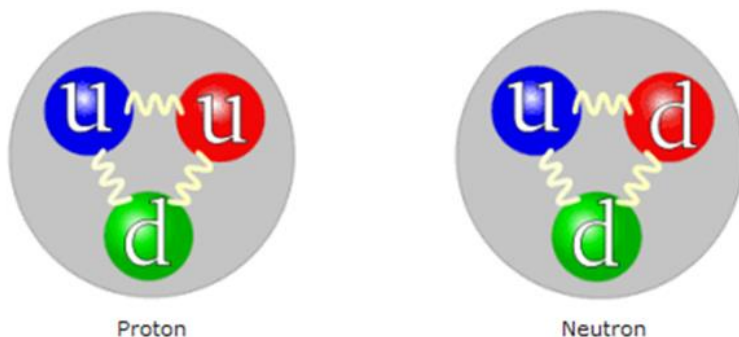
The periodic table displays elements from Period 1 to Period 7, including the Lanthanide Series (57-71) and Actinide Series (89-103). Elements are color-coded by groups: Alkali Metals (yellow), Alkaline Earth Metals (orange), Transition Metals (pink), Inner Transition Elements (purple), Post Transition Metals (light green), Halogens (green), Noble Gases (light blue), Metalloids (light green), Synthetic (light blue), and Radioactive (red). Callouts for Carbon (C) and Helium (He) provide their atomic number, symbol, name, and atomic mass.

These elements have exogenous electrically active protons in their nuclei, ranging from 1 up to 118 protons.

There are multiple theories on how nature compiled the nuclei of these elements after the Big Bang.

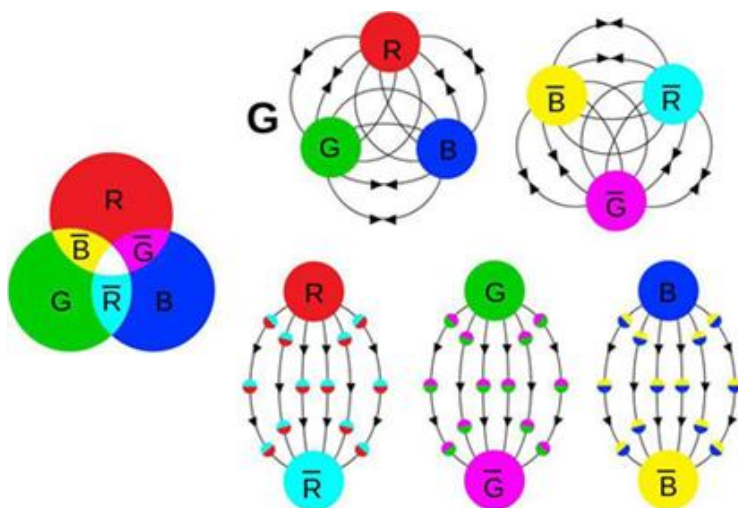
There is not yet a conclusive outcome despite building an array of massive and very costly machines to unravel the structure

The temporary consensus is that these nucleons are compilations of quarks:



Quark composition of a proton and a neutron (diagrams from *Wikipedia*)

and the dynamics of the strong nuclear force:



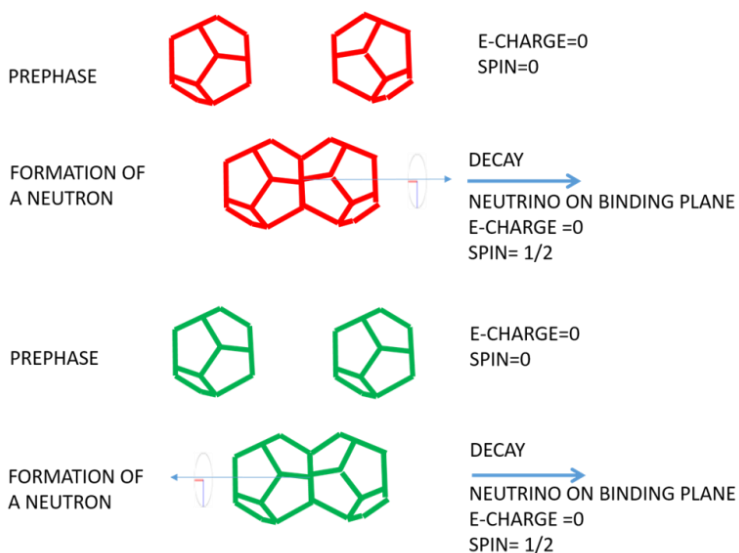
It does not add value within the framework of The Dutch Paradigm to further detail the ideas of all these interactions and constituents as suggested by contemporary astrophysicists.

Most of the elements have isotopes. Isotopes are atoms of the same element which all have the same number of protons and electrons but

differ in numbers of neutrons. The difference in the number of neutrons means that the isotopes have different masses. Not all isotopes of an element are stable, but some are.

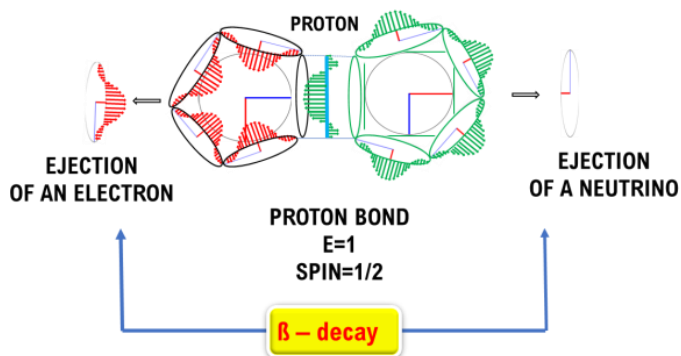
The Dutch Paradigm defines new models for the constructs neutron and proton. They allow understanding of their twin dodecahedron structure and impacts on the characteristics of the atomic nucleus.

As a reminder:



In the picture above, the neutron oscillates whilst the two dodecahedrons are in synchronization and in equal electrical mode.

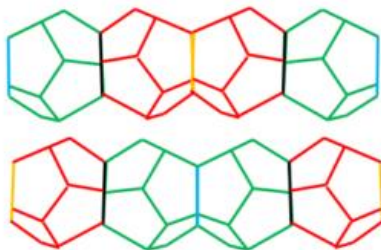
Whenever one of the two dodecahedrons oscillates out of sync, then β -decay occurs, and the construct transforms into the proton:



Protons are formed either through β -decay of the neutron or through an occurrence in which two naked dodecahedrons meet and merge, but always providing that their respective electrical system is out of sync prior to such occurrence.

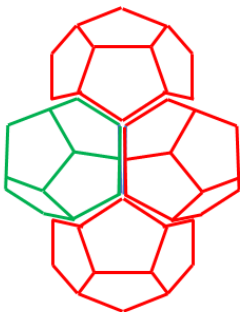
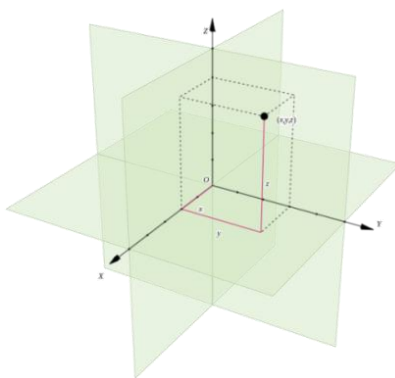
Beyond that, and provided that there is a second proton nearby, two protons may form a double twin-dodecahedron structure with opposite proton bonds and become electrically neutral. The outcome is a new construct with characteristics that mainstream science refers to as dark matter.

Two protons can merge together yielding two different composite versions:



The difference is that the two end-faces in the top version accommodate one gamma photon each, whereas the two end-faces in the bottom version are empty. Note that residual single gamma photons are the remnants of the electron after ejection of the neutrino.

There are multiple possibilities for protons and neutrons to merge with such a dark matter combi-proton towards forming more complex nuclei.



There are multiple variables in configuring within the same building principles. The proton bonds align in the direction of the three-axis and not all faces of the dodecahedrons are directly connected. The kissing factor for the dense spherical packing is twelve, and although the essential geometric element is not a ball, the dodecahedron will form spatially within a ball-like structure.

Even different configurations of the nucleus are conceivable for one and the same element.

Most elements in the Periodic Table have isotopes. Of the eighty elements with a stable isotope, the maximum number of stable isotopes observed for any element is ten (for the element Tin). No element has eight or nine stable isotopes. It might be that this links into filling up empty faces of protons in line with or parallel to the direction of the three-axis, but also here, I must be cautious.

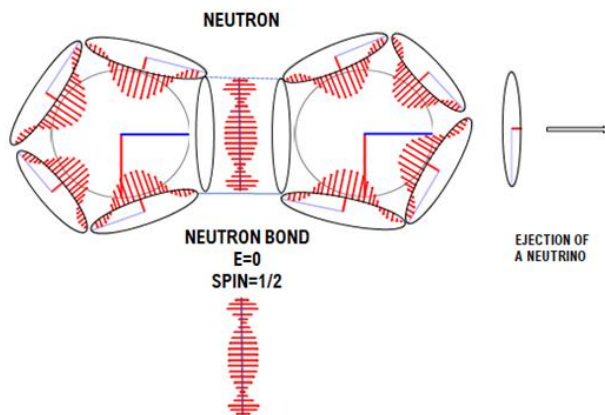
Dark matter offers the same possibility to couple with neutrons as protons but starts as a combi-proton.

So, multiple variables influence how complex nuclei in fact can be compiled. Also, there may be several options for stable nuclei for the same element. It requires a thorough study to simulate the available options and the stability thereof.

It is important to note that whenever a nucleus has more neutrons than protons, there is an issue in the contemporary model of particle physics on how these excess neutrons intertwine within the nucleus.

After all, such extra neutrons are not necessary to separate two protons and only bind each other with difficulty because of the Pauli Exclusion Principle.

Based on the models of The Dutch Paradigm, an excessive neutron will most likely bind with an empty face on a dodecahedron in the nucleus.



Chapter 11 of this book explains that establishing such a neutron bond requires a firm compression of the two dodecahedrons to overcome the Pauli Exclusion Principle. Capturing a visiting neutron in an existing nucleus with a neutron bond is, therefore, highly unlikely, and only a possible binding to an empty face of a dodecahedron is plausible. If this does not occur, a fast, prompt neutron will break another neutron free, and both neutrons will exit the nucleus.

Though I cannot detail in this book the stacking of dodecahedrons in more nuclei of the elements as listed in the Periodic Table, we know that these elements are available in the atomic structure in the earthly environment.

We also understand that the isotopes of an element follow a path to higher levels of stability by reducing the number of neutrons in the

nucleus: neutrons to protons via β -decay or conversion of dark matter by splitting into exogenous active protons.

The models of The Dutch Paradigm can be used to understand the processes of fission and fusion in a more practical way.

22. β - DECAY IN PERSPECTIVE

The elements in the Periodic Table of Elements are listed in order of increasing number of exogenous electrical active protons represented by the atomic number. Elements may have isotopes. An isotope of an element has more neutrons than (exogenous electrical active) protons in the nucleus, and therefore, their respective mass values are different.

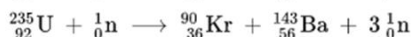
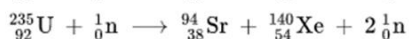
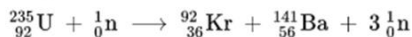
Such isotopes may be recently formed under earthly conditions by neutron capture. The stability of isotopes towards decay varies from nanoseconds to years.

The mere fact that we observe neutron capture under ambient conditions means that a neutron can bind itself to the nucleus, even though the nucleus is shielded in an atomic structure. Maybe for a short period, but it can bind itself with a bond varying in resistance to decay.

For the neutron to bond itself to the nucleus, it must attach itself to a suitable face of one of the dodecahedrons that make up the nucleus. Such a suitable face is either empty or occupied by a gamma-photon.

Such conditions result from the previous β -decay of a neutron into a proton. Such end-faces can belong to exogenous electrical active protons as well as to dark matter, i.e. the combi-protons.

A nucleus can also release neutrons. Such a release is stimulated in nuclear power stations:



We, therefore, can conclude that even in the atomic structure, a nucleus can be modified.

The process of nuclear fission is controlled by capturing excess neutrons in control rods. These rods consist of boron, cadmium, silver, or indium. Such rods can capture neutrons, but the constituent isotopic elements decay over a prolonged period through the ejection of neutrons. Lead and water can also be applied to temporarily store excess neutrons.

The question arises: what is the phenomenological background of such capturing, release, and decay?

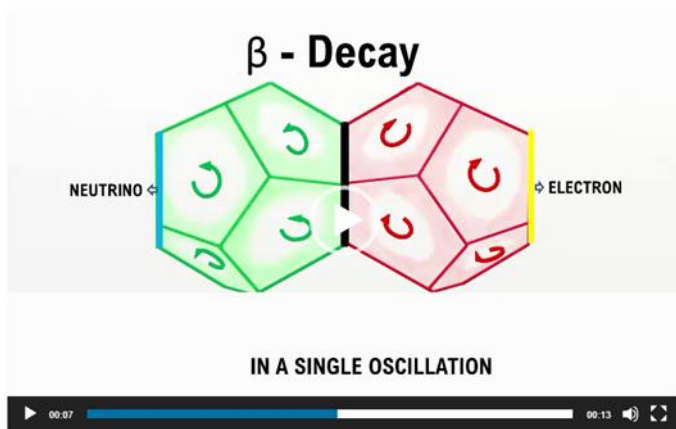
The complex nuclei of the above mentioned heavy elements were conceived and came into being back in time, millions of years ago.

I previously explained that the conception processes up to the emergence of Deuterium, Tritium, and Helium could be traced back to the first period after the Big Bang. Human thinking can logically imagine this to be an evolving process characterized by mutual interferences of electromagnetic systems that present at the time. Entities must react and follow the erratic behavior of their free electric quanta in a captive mode with a delay of 1 Planck-time.

The sequence of evolving and lasting interferences followed a distinct pattern of perfection falling into chaos and a subsequent grouping of entities through self-assembly to a higher level of perfection, i.e., the electron, but now as a group of entities. The electrons thereof may ultimately self-assemble into a new spatial construct in the geometry of a dodecahedron with twelve embedded electrons each. Such a construct of clustered entities is also prone to instability caused by an exogenous imperfection, bringing the clustered entities into a new state of chaos relative to one another.

The phenomenon of β -decay came into play.

In simple terms, β -decay is the transformation of a neutron into a proton. This process is visualized in the animation below:



www.thedutchparadigm.org.

It starts with a single neutron, whereby all electrons on the faces of the two dodecahedrons are in a state of complete harmonization with one another.

An exogenous cause disrupts the synchronization on one face. The disruption can start from (almost) any of the faces of a dodecahedron.

A severe disruption will break the harmonization in the oscillation of the two dodecahedrons. Such an event causes the neutron to transform into a proton.

This β -decay introduces a second building block for more complex nuclei next to the neutron. The proton is electrically active, and the electrons on the two binding faces have been modified. The electron

decays under the ejection of a neutrino on one face, leaving a gamma-photon on that face. The electron on the other face is ejected completely. That face becomes empty. Both end faces may eventually form a bond with a neutron. The same logic applies to a dark matter configuration of two opposite protons and will emerge as another building block for nuclei.

It is a perfect imperfection that triggers a next step in attuning the electromagnetic manifestations of the group of entities towards forming more complex constructs, even combining more entities in a group with a dark matter configuration

It is a process of externally initiated interference, followed by the captive response of the electromagnetic compensating systems of the entities involved in the group operating in the agitated dodecahedron. Within the dodecahedron, the interference initiates a succession of cause-and-effect steps of 1 Planck length in 1 Planck time to restore harmonization over the electromagnetic systems within the dodecahedron, within the group of entities involved. At the same time, it instigates a difference in the configuration of the twin dodecahedrons. The dodecahedron under interference misses the synchronized oscillation. The neutron transforms inexorable into an electrically exogenous active construct: the proton.

I conclude that a new pattern institutes over many iterations of Planck times. The stable result is indeed a proton being a new arrangement of the entities in the group of two dodecahedrons.

The process of self-assembly is called β -decay.

In contemporary science, the occurrence of β -decay is assessed as a stochastic and quantum mechanical event. It just happens and shows it to what it is. Unpredictable and without a trigger.

Unpredictable, yes, but there is no quantum physical uncertainty in play. It is a stochastically initiated process on grouped entities resulting in self-assembly to a new level of functionality of the entities within the group.

The next question follows:

From the idea of the perfect imperfection, must this always be an exogenous cause?

From the earlier order of chaotic disturbance to a higher ranking, it is plausible that this is always an exogenous disturbance. Also, this disruption is, in essence, disorganized, not determined in outcome per individual entity. It is the ultimate consequence of the freedom of the electric quant of each naked entity to move in whatever direction of its 1 step of 1 Planck length per 1 Planck time. It is an item-based uncertainty. The group of entities active within a geometric structure must respond in harmony. The harmonization will consume many Planck iterations to mature, identifiable as hysteresis.

It is striking that the switch from neutron to proton starts with a minor imperfection. The disturbance in harmonizing a dodecahedron in the twin dodecahedron of a neutron should not be so great that the neutron breaks into two parts. It should be just enough that the simultaneous oscillation of the two participating dodecahedrons is disturbed.

The switch to the situation of the virtually indestructible proton takes place endogenously.

As a metaphor, you can give the functionality of leverage:



What can happen if such an exogenous disturbance occurs?

The electron came into being following a weak interference of a free electric quant of a gamma-photon with a gamma-neutrino magnetic manifestation. The resulting construct electron institutes a powerful exogenous electric manifestation. The strong response of the electromagnetic systems geometric follows in captivity the minor interference of a free electric quant of the gamma photon.

Subsequently, the exogenous manifestations of the electrons triggered the forming of the single dodecahedron.

The neutron emerged as a twin dodecahedron, and the electrical manifestations of the electrons became internally neutralized: the neutron was formed.

The free electric quants that initiated the forming of electrons were weak initiators but resulted in formidable electrical manifestations.

All electrons in the dodecahedrons of the neutron were equipped with such a robust electric effect.

Then another minor imperfection unleashed β -decay and brought the electrical manifestation of one electron out of captivity: the forming of the proton.

A single proton also forms the necessary condition to build more complex nuclei

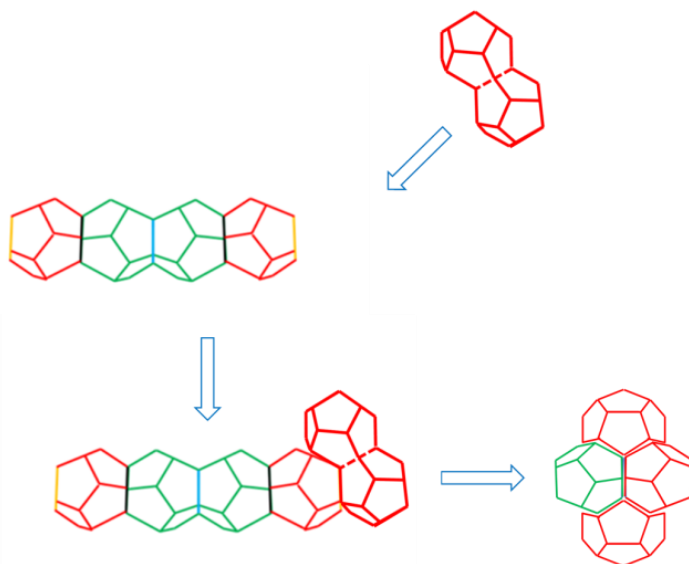
The Periodic Table of Elements listing identifies all more complex nuclei formed, based on the proton, neutron, and electron as modeled in The Dutch Paradigm.

The elements in the Periodic Table are identified by their valence number, reflecting the number of exogenous electrically active protons in the nucleus.

It is well accepted that after the first couple of minutes, only β -decay of neutrons can deliver additional protons. If these protons could sustain their valence exogenously, they could eventually become atomic. The other possibility was forming dark matter combi-protons while integrating them into an exogenous electrical neutral construct. We can draw a comparison with electrons in Cooper pairs as an example of pairing resulting in exogenous electrical neutrality.

The Dutch Paradigm claims that stars are formed by a grouping of dark matter under gravitational attraction. Dark matter in isolation is exogenous electrically neutral but offers two faces that allow neutron and proton binding.

Dark matter also has an empty face to which another neutron can weakly bound and thereby start the 3D build of a potential complex nucleus. Dark matter combi-protons and neutrons could tumble around and have weak interactions with one another. It is another form of chaos in a densely packed environment in a star.



In such a hotchpotch of dodecahedrons, imperfections could come in instigating β -decay. These imperfections instigate the next step in perfection: more complex nuclei. More complex nuclei mean the presence of electrically active proton bonds, and therefore β -decay has to occur.

Possible sources of disturbance for β -decay were available:

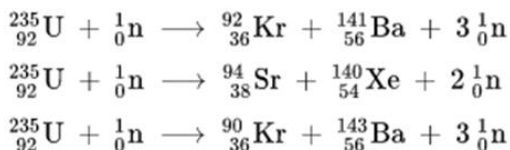
1. Gamma-photons
2. Gamma-neutrinos
3. Electrons
4. Single dodecahedron
5. Neutron

This list is ranked relative to the volume of the source for disturbance. At the same time, it reflects the amount of mass attributed to a source. Mass is explained as the attunement of the free electric quant to the complexity of lasting interference. Attunement was necessary to maintain all the electromagnetic manifestations at the speed of light.

β -decay disturbs the harmonization of a single electron in the geometry of a dodecahedron. It might result in the neutron getting out of the synchronized oscillation. It is a relatively mild interference that can be elastic as well as an inelastic scattering. The gamma-photon cause is initiated in 1 Planck- time; the dodecahedron needs many Planck times to respond for a complete harmonized effect and therefore shows the phenomenon of hysteresis.

All other possible disturbances may occur but are more complex. Certainly, gamma-neutrinos and electrons can interfere, but not as β -decay. They can enter twin dodecahedrons to fill faces on the dodecahedrons that are empty or only housing a gamma-photon. These interferences will nevertheless not trigger a direct β -decay.

We know that neutrons can interfere in nuclei, as listed in the reactions:



The interferences in this overview are destructive, and the energy of the nuclear reactions causes the ejection of neutrons at high speed. The effect is breaking the nucleus. The isotopes of the broken nuclei are not stable and eject superfluous neutrons. Also, this is not β -decay

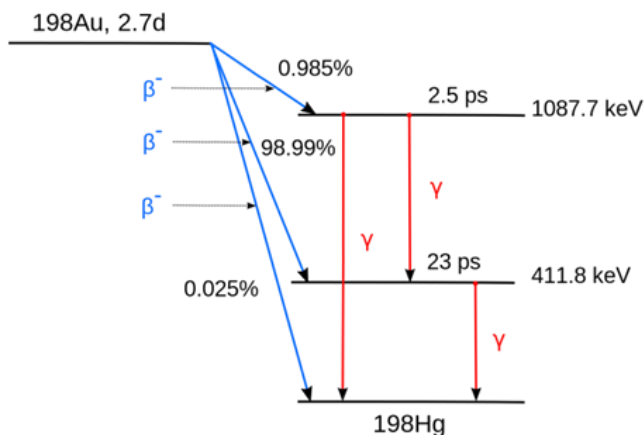
because the number of protons does not change in this neutron capture.

It is plausible that β -decay is primarily instigated by gamma-photon interference

It is of interest to reflect on the knowledge that scientists have gathered on the behavior of gold regarding neutron capture.

Wikipedia on neutron capture by ^{198}Au

Neutron capture at small neutron flux



At small neutron flux, as in a nuclear reactor, a single neutron is captured by a nucleus. For example, when natural gold (^{197}Au) is irradiated by neutrons (n), the isotope ^{198}Au is formed in a highly excited state, and quickly decays to the ground state of ^{198}Au by the emission of gamma rays (γ). In this process, the mass number increases by one.

This is written as in the form $^{197}\text{Au} + n \rightarrow ^{198}\text{Au} + \gamma$, or in short form $^{197}\text{Au}(n,\gamma)^{198}\text{Au}$. If thermal neutrons are used, the process is called thermal capture.

The isotope ^{198}Au is a beta emitter that decays into the mercury isotope ^{198}Hg . In this process, the atomic number rises by one.

Neutron capture at high neutron flux

The r-process happens inside stars if the neutron flux density is so high that the atomic nucleus has no time to decay via beta emission between neutron captures. The mass number therefore rises by a large amount while the atomic number (i.e., the element) stays the same. When further neutron capture is no longer possible, the highly unstable nuclei decay via many β^- decays to beta-stable isotopes of higher-numbered elements.

What is shown here under neutron capture at small neutron flux is the effect that I just explained. The neutron anchors on an end face of a proton on which a gamma photon is circulating. That gamma photon is ejected and can subsequently trigger the β -decay of a neutron to a proton. The result is a proton added to the Au nucleus, resulting in a nucleus of Hg.

The higher flux of neutrons will increase the neutron captures and brings the Au nucleus first to a higher isotope number before β -decay occurs through gamma-photon interference.

Practically, only the gamma photon remains as the concrete physical source for initiating the disruption of the oscillation with subsequent β -decay. In my opinion, the half-life of an isotope then depends in essence on the incident gamma photons.

Based on this assessment,

What we observe of β -decay under ambient conditions is linked to the low background radiation of gamma-photons to which the isotopes are exposed

This concludes that fusion in building more complex nuclei in stars is also based on neutron and/or dark matter capture with subsequent gamma-photon interference to trigger β -decay.

I state once more that the name β -decay is deceitful. It is just the opposite; it is the imperfection of a gamma-photon interference triggering the further development towards perfection of groups of entities in more complex structures of nuclei.

23. GAMMA-PHOTON IN PERSPECTIVE

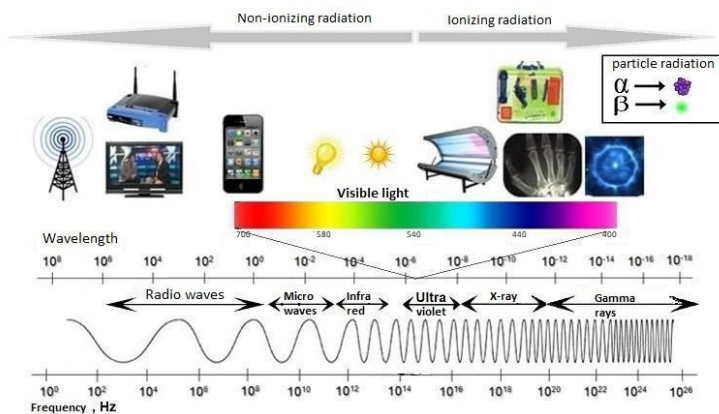
A collision between a gamma-photon and a neutron initiates β -decay. This conclusion needs further analysis.

Such collision causes interference resulting in energy transfer from the free electric quant of a gamma-photon to anyone electron of the twin dodecahedron structure of the neutron. The energy of the free electric quant is hf , and in 1 Planck time, Δhf energy is transferred.

We know by now that this energy transfer may initiate β -decay, but this is only one out of several possible outcomes.

We are also familiar with photon–electron interferences as inelastic and elastic scattering. We know the specific situation in which an electron absorbs and ejects a photon in the visible section of the electromagnetic spectrum.

The electromagnetic spectrum



This overview shows the complexity and confusion when discussing photons. Photons behave not all the same upon encounters with electrons.

The Dutch Paradigm proclaims that all photons entered the physical universe as free electric quanta at gamma frequency. These naked gamma-photons encountered gamma-neutrinos and together constituted electrons. However, not all gamma-photons participated in this process. Consequently, there were still naked gamma-photons in abundance after this initial phase of electron forming.

The free electric quanta of these gamma-photons can interfere with any objects they encounter while traveling in a straight line through the universe. Almost all encounters induce a small energy transfer of the free electric quantum hf of the photon onto an electron, be it free electrons or electrons embedded in dodecahedron structures such as the neutron, proton, and dark matter.

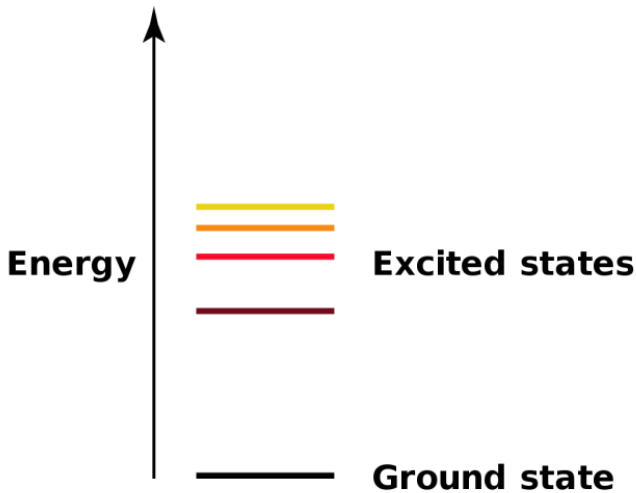
Such encounters between gamma-photons and embedded electrons may cause the system frequency of the electron to get in a state of disharmony viz-a-viz its neighboring electrons in the dodecahedron structure of the electron.

The interferences are typically inelastic, causing the gamma photon to reduce frequency and change in momentum. Subsequently, the gamma photon is released back into space and continues to exhibit this interference behavior until gradually the energy content of its free electric quantum is depleted.

Referring to the image above, this reduction in frequency can be inferred from the electromagnetic spectrum. In the gamma frequency range, photons can interfere with the nuclei. Even with atomic shielded nuclei, it is clear that X-ray photons ignore the shielding and

interfere with nuclei in complex structures such as in human bones. It is called ionizing radiation.

We then arrive at an area in the frequency spectrum around 10^{14} Hz, where the electrons reflect the photons elastically. This behavior creates a reflection in visible sharp images of the specific objects under interference. At even lower frequencies, we see that this sharp reflection as a unique feature disappears, but instead, we observe that these photons at a low frequency can heat the objects. These photons eventually seem to have endured a more extended period of frequent interferences with electrons in their path, and we couple that with energy level transitions.



We can manipulate the photons to transfer superimposed information at low frequencies relative to gamma frequencies, i.e., radio, television.

On top of all these photonic capabilities is the energy transfer by the free electric quant to accelerate the object under interference.

The functionality of a gamma-photon to act as the perfect imperfection to instigate β -decay needs an in-depth study to clarify the conditions of interference and the downward limitations in frequency when β -decay is not possible anymore.

It marks the change-over to the subsequent effect of photon collision with an electron on the face of a dodecahedron.

