

The Dutch Paradigm

Jac C. van den Broek

A DEEP INSIGHT INTO THE DUTCH PARADIGM

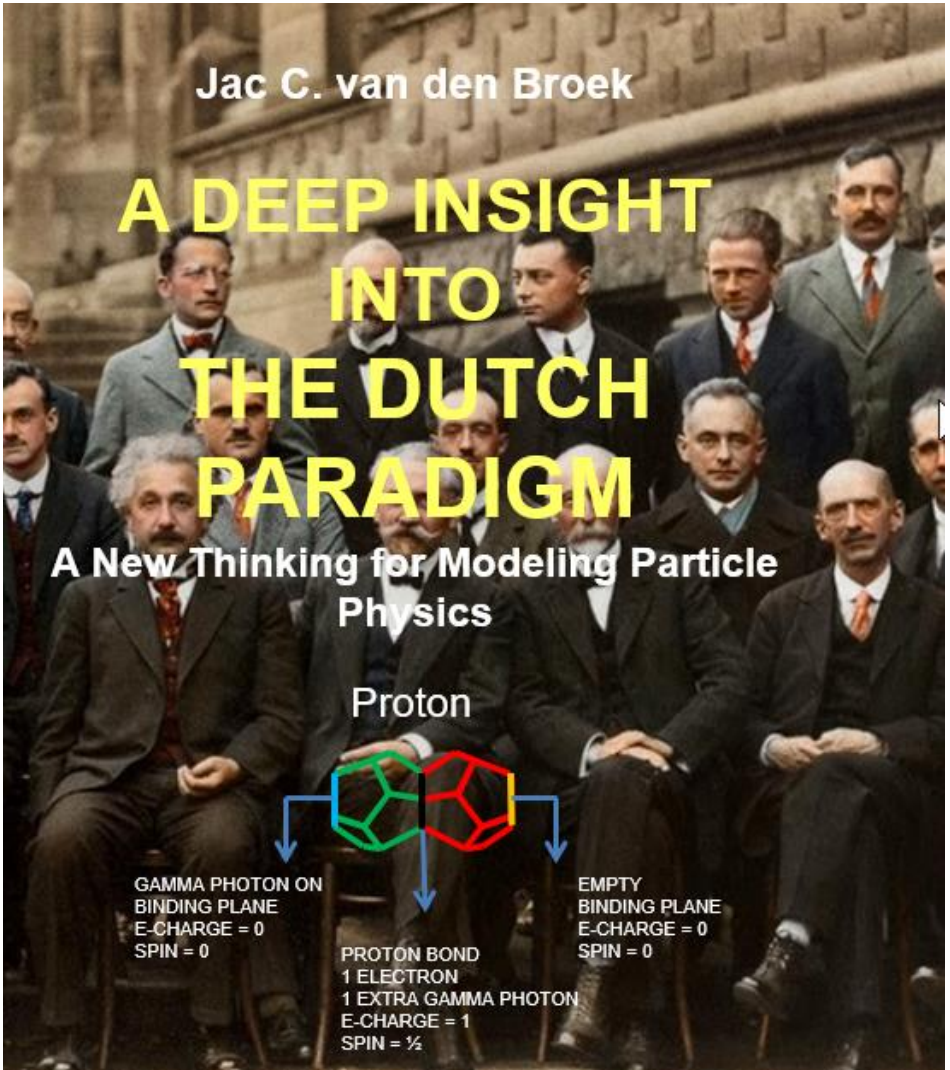
A New Thinking for Modeling Particle
Physics

Proton

GAMMA PHOTON ON
BINDING PLANE
E-CHARGE = 0
SPIN = 0

PROTON BOND
1 ELECTRON
1 EXTRA GAMMA PHOTON
E-CHARGE = 1
SPIN = $\frac{1}{2}$

EMPTY
BINDING PLANE
E-CHARGE = 0
SPIN = 0



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A Deep Insight into The Dutch Paradigm

A New Thinking for Modeling Particle Physics

Stichting The Dutch Paradigm

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Particle Physics

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1. INTRODUCTION

My thought process in search of more coherence in particle physics brought me to the principal conclusion that all scientific observations in the physical world are reflections of the electromagnetic system of just photons and neutrinos only. The electromagnetic systems of these particles can, through mutual interference at gamma frequency, form the electron. Hence, the electron is not a point particle, as widely believed, but a construct of one gamma photon and one gamma neutrino.

That is all there is.

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

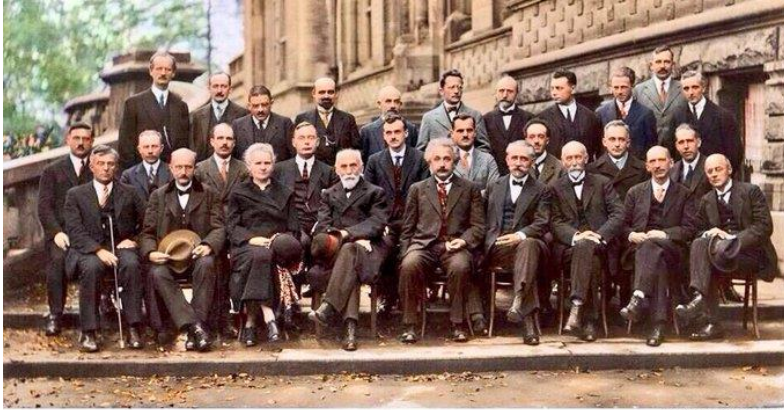
I postulated these principle conclusions in the book *The Dutch Paradigm* (2018). I invited the reader to follow me on my quest of finding answers to the outstanding issues on particle physics, taking the reader through the successive steps, starting with the Big Bang, modeling the electron, the nucleus, the atom, and, ultimately, all elements.

The outcome is overwhelming by the beauty emerging from the incredibly tiny world of elementary “particles.” The physical world of electromagnetic manifestations presents itself to us in all its complexity. It must be appreciated, though, that this complex physical world of electromagnetic manifestation is seen through the eye of the beholder just as the illusion of visually recognizable objects. The same electromagnetic manifestations enable us not only to see but also to touch these objects.

Physical reality indeed presents tangible illusions to us.

Is this the physical reality?

In 1927 a group of famous scientists came together to explain and discuss their views and findings.



SOLVAY CONFERENCE 1927

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A. PICARD E. HENRIOT P. EHRENFEST EG. HERSEN TH. DE DONDER E. SCHRÖDINGER E. VERSCHAFFELT W. PAULI W. HEISENBERG R.H. FOWLER L. BRELLOUIN
 P. DERBY M. KNUDSEN W.L. BRAGG H.A. KRAMERS P.A.M. DIRAC A.H. COMPTON L. de BROGLIE M. BORN N. BOHR
 L. LANGMUIR M. PLANCK Mme CURIE H.A. LORENTZ A. EINSTEIN P. LANGEVIN CNÉ. GUYE C.E.R. WILSON Q.W. RICHARDSON
 Absents: Sir W.H. BRAGG, H. DESLANDRES et E. VAN AUDEL

Their work still reverberates in our times. There is so much fruit of deep thinking that has come available since, but no solid answers to the open issues have been delivered as yet, despite all efforts by contemporary scientists. Unfortunately, what we find too often is that metaphysics is deployed to substantiate scientific claims.

The Dutch Paradigm started off in pursuit of a daunting target of finding ultimate answers to the unanswered phenomena in particle physics. I braced myself to encounter unsurmountable inconsistencies, but actually, there were none.

The Dutch Paradigm delivers a new and causal outcome addressing the nagging issues, in deep respect and tribute to the early scientists for all their impressive work and thinking that gave particle physics a new start some hundred years ago.

The view on physical reality is described in the first book, The Dutch Paradigm.

This second book on The Dutch Paradigm is complementary to the first book and discusses in more detail my line of thinking.

There is nothing more in the physical reality than photons and neutrinos, either naked or in constructs.

That's all there is.

Jac van den Broek

2. DO WE UNDERSTAND HOW SENSORY IMPRESSIONS EMERGE INTO IMAGINATION?

Do we understand what we see, and are we able to agree on a mutual opinion thereabout?

Genesis 11 describes the punishment God gave to the earth's inhabitants in response to the hubris of building a tower in Babel that should reach heaven. This punishment was what we still refer to as the Babylonian confusion of tongues.



The tower of Babel by Pieter Bruegel the Elder

Whether this was really a punishment from God or whether there are other arguments to mention, the fact is that we understand well what is meant by a Babylonian confusion of tongues.

There is a reference to a lack of understanding between people.

The discussion's message distorts through a lack of mutual accepted context and the inability to comprehend what the other is thinking and verbalizing.

It triggers mistrust towards intentions.

The top of the tower of Babel did not reach heaven.

There are a lot of problems in interpreting extensive cosmological observations. We can visualize nowadays the information gathered from the Hubble telescope into a sensory objective perception of these images. We can see that stars and galaxies were factually present so many million or billion lightyears ago. The Hubble information does not require additional modeling. We grasp what we see.

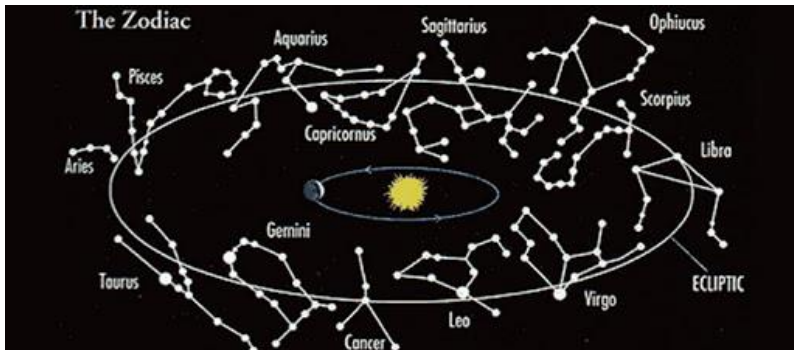
What is striking is that the scientific dispute is mainly about what we do not perceive: black holes, dark mass, dark energy. When talking about black holes, dark mass and dark energy, a stream of causes come your way with little overlap in coherence and logic. We miss content in what we observe and lack consensus in assumed causality.

It is similar to the interpretation of perceptions regarding the subatomic world. For the anomalies from what we expected to observe at the quantum level, we have reluctantly accepted methods to fill in what we miss at that subatomic level. We use in mathematics the renormalization tactic and make arbitrary decisions to model the image towards the expectation. Even inserting virtual parts and virtual properties are in the toolbox now to validate theories to explain the observation.

These words indicate confusion because you try to make the image “normal” again if you renormalize. We fit the observation to comply with the norm of thinking about the perceived image. We model our expectations.

This type of imaginative interpretation of the observation is not new.

Our ancestors had their own ideas about what they saw in the sky.



They seriously believed that there were influences from these groups of stars on the images in our thinking, life, and opportunities for building fortunes. Your life was written in the stars. Soothsayers could read it in a crystal ball.



John William Waterhouse – The Crystal Ball

That was not possible for ordinary people. Ordinary people could look into that impressive crystal ball but saw nothing. The fortune-teller did, but every fortune-teller saw something different.

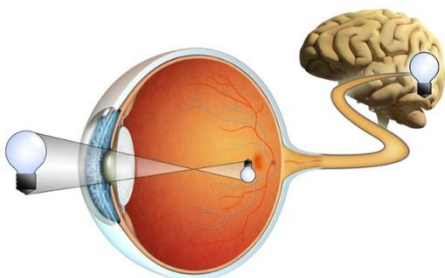
When we now talk about massive black holes, dark matter, dark energy, and gravitational waves, then we try to understand and explain the events of ancient times. And nowadays, we get Hubble pictures. We perceive the information sensually. Still, it also becomes clear that we can only moderately interpret and understand the illusion we get from the images. As contemporary alchemists, we take a dive into the metaphysical treasury for virtual aids. Just look in the crystal ball, you don't see it, but it is there.

When we observe, we refer eventually to information that we receive with senses, in particular our eyes.

Looking to the sky, we receive a gigantic number of sensory impressions via photons on the retina. These photons have its frequency in the visible part of the electromagnetic spectrum. We now know quite a bit about

this. It becomes more difficult to understand the sensory processing of those impressions into images physically.

With all due respect for what we know about this, we still have a primitive physical model of this phenomenon:



We know little about converting a sensory impression into visual content that can be understood by thinking. We quickly agree on the image content itself. However, describing that image content is in itself problematic. A well-known saying is that a picture says more than 1000 words.

We may all see the same thing, but we are subjectively selective in examining the observation in search of causality. We mainly filter on recognition and expectation and consequently apply inherently subjective measuring criteria and methods. We simply cannot comprehend how our ancestors saw these Zodiac signs.

With every scientific description, we assume that we can recognize in the outside world an objectified causal relationship in the sequence of visual impressions. Photons' interference initiates this sequence of visual impressions on the retina in a high frequent mode of 10^{43} frames per second. Our sensory perception of an image we see is refreshed at a frame rate of only some 50-60 per second. As humans, we can apparently absorb the visual impressions into an image for recognition after the

amalgamation of these 10^{43} frames of photonic interferences in our eyes. Still, we have the hidden assumption that this amalgamation of this entire massive amount of information is objective. Once we have captured the images as an individual picture and at this frame rate of 50-60 per second, we start by thinking to classify and record these frames conceptually.

This is a subjective action.

If possible, we record these images in a logical connection to understand causal coherence in time. Subsequently, as scientists, we try to find mathematical relationships that we can value metrically according to the assumed and declared validity of variables. We try to get rid of subjectivity and install an objective assessment of what is happening. There are many possibilities to arrive at a mathematical connection of images; I will not go into that now. A mathematical relationship indeed depends on the position of the observer relative to the observed objects. When both the observer and what is observed have a speed difference, everything becomes much more difficult to describe. Lorentz and Einstein have contributed a lot to recognizing time as a variable.

This book and The Dutch Paradigm focus on particle physics. The world of the elementary parts in which we have made impressive inroads for measuring and understanding isolated phenomena. Still, we lack an overall understanding of the scientific coherence of subatomic phenomena. This lack of knowledge can show up when rather small deviations on the particle level translate and emerge as massive phenomena with their impressive impact and existence when we look to the sky.

Observing elementary particles and their interactions does not allow precise description. It is a challenge to distill information on that subatomic level, and much of that information is rather difficult to describe and certainly to visualize. Interpreting the information into causal relations is another daunting challenge. We do not have a Hubble-“microscope.” The world to be observed when we focus on the smallest

objects becomes a mystery. We do not recognize understandable images in what we see.

It is this challenge for which The Dutch Paradigm has drawn up models for particle physics and further to process these into imaging and metric validation in thinking. The modeling has been carried out up to and including the formation of complex atoms. I expect that the other compositions up to celestial bodies should be possible within the first principles and variables declared by The Dutch Paradigm. This interpretation will then start from understanding phenomena and properties that played a subordinate or not yet recognized role in the model formation up to the atom formation. These are inclusive considerations as well as implicit rejections of assumptions as declared in current theories.

3. MANY OPEN QUESTIONS ABOUT THE STANDARD MODEL

At the end of the nineteenth century, there was the idea that nature and the universe were well understood and did not hide unforeseen secrets anymore. A few more bits and pieces to describe, and that would conclude the scientific job.

Then came the turn of the century.

Max Planck came up with his wild idea that reality seemed to be quantized and perhaps was even discontinuous. Albert Einstein indicated that time is a variable, which mirrors a different image of reality when observers mutually differ in speed. Paul Dirac believed, based on his mathematical equations, that there should be anti-matter. Werner Heisenberg took another scientific look at the two-slit problem and concluded that reality shows itself in uncertainty. Erwin Schrödinger made his impressive mathematical wave equation. It still stands like a rock. Mathematicians underlined their profession's importance by stating that if the mathematical coherence in what we observe is correct, this also applies to phenomena that we do not observe but are still possible mathematically as a solution. The assumption was being propagated that everything most probably had to be symmetrical, and the search was for phenomena that could restore the perceived break of symmetry. In the meantime, the scientists had become accustomed to thinking in electric and magnetic fields, according to James Maxwell and Michael Faraday. The Maxwell laws' application was astounding successful and the start of impressive applications for lighting and propulsion.

After that period of tremendous impulse in breakthroughs, the different ideas and theories were further developed. It soon became apparent that there were significant differences in the assumptions - hidden or not -

that the inventors had used. Fascinating conflicts arose in overlapping areas of the application of theories.

An important issue at the time was: is what takes place at the subatomic level important at the macrocosmic level?

Well, Niels Bohr took a pragmatic position on that. He more or less argued that when something can be proven as macrocosmic evident, then subatomic considerations cannot change that wisdom (also be referred to as The Copenhagen interpretation of the quantum theory). The technicians, as well as chemists, can comfortably work with this Copenhagen interpretation.

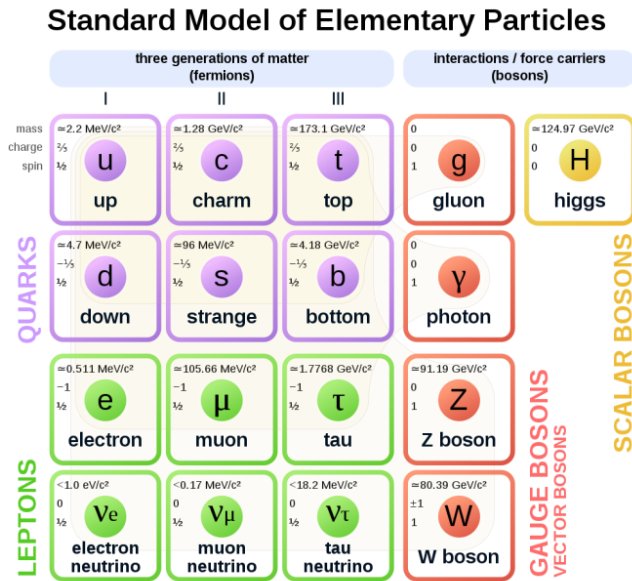
The Copenhagen interpretation and especially the applications of that thinking to practical applications have had an enormous social impact and, at the same time, made the study of particle physics a largely value-free science with little practical significance. Nice to know, but what does it add for practical purposes? Kind of what happened with the appreciation and the fate of philosophy?

We can derive practical know-how for working with radioactivity, nuclear fusion and fission, optics, and the like from the subatomic phenomena' empiricism. We can handle the technicalities irrespective of understanding the underlying phenomena in depth towards first principles.

There is no urgent need for clarification. It is an open playfield without scrutinizing to eliminate for false play.

We are now quite a few decades later. It takes courage to say that we actually did not make substantial progress in developing the original ideas and theories on a subatomic level. We do not find anti-matter, the Schrödinger equation has no practical application, and we still do not know how a proton is constructed. Is time continuous or quantized? Is a "particle" a particle or a wave? Why do we find stubborn small deviations in symmetry? What is gravity, and why can we not allocate mass? A great deal and good thinking have been done to deal with each of these issues, but unfortunately, with only interest in particle physics subsections.

The Standard Model of Elementary Particles was established.



The input for the Standard Model is derived from numerous sources and theories. The last addition is the Higgs boson as per 2012. All 17 particles are assumed to be point particles, not showing a spatial extension.

Through decades, this Standard Model has been extended by theoretical and experimental physicists.

Wikipedia:

Although the Standard Model is believed to be theoretically self-consistent and has demonstrated huge successes in providing [experimental predictions](#), it leaves some [phenomena unexplained](#) and falls short of being a [complete theory of fundamental interactions](#). It does not fully explain [baryon](#)

asymmetry, incorporate the full theory of gravitation as described by general relativity, or account for the accelerating expansion of the Universe as possibly described by dark energy. The model does not contain any viable dark matter particle that possesses all of the required properties deduced from observational cosmology. It also does not incorporate neutrino oscillations and their non-zero masses.

The development of the Standard Model was driven by theoretical and experimental particle physicists alike. For theorists, the Standard Model is a paradigm of a quantum field theory, which exhibits a wide range of phenomena including spontaneous symmetry breaking, anomalies and non-perturbative behavior. It is used as a basis for building more exotic models that incorporate hypothetical particles, extra dimensions, and elaborate symmetries (such as supersymmetry) in an attempt to explain experimental results at variance with the Standard Model, such as the existence of dark matter and neutrino oscillations.

The Standard Model developed into a mix of long-standing opinions and new findings, but it is also a window to show nagging mysteries. And though a picture can show more than 1000 words, it can also exhibit the inability to describe the content with the 1000 words.

These particles display their properties in fields specific to that particle, fields that are uniform in properties and extend all over the universe. A universe that is also expanding. Fields allow themselves to be deformed by the space-time curvature yet always are assumed to exhibit the same properties locally. Black holes behave differently. Metaphysic solutions have been introduced. Unobserved but expected phenomena are scientifically accepted by having virtual properties. More is happening between Heaven and Earth, but so are the proclamations in the books of faith. Well, all in all, this is for a sober, sane, and knowledgeable person tough to comprehend.

Fortunately, it is not a problem in our daily life.

Standard Model of FUNDAMENTAL PARTICLES AND INTERACTIONS

The Standard Model summarizes the current knowledge in Particle Physics. It is the quantum theory that includes the theory of strong interactions (Quantum Chromodynamics or QCD) and the unified theory of weak and electromagnetic interactions (electroweak interaction), usually included in the last Section. It is one of the fundamental interactions (along with gravitation and quantum fields).

FERMIONS

Leptons spin = 1/2

Flavor	Mass (GeV/c ²)	Electric charge
e^- electron	$<1 \cdot 10^{-6}$	0
μ^- muon	0.009511	-1
τ^- tau	1.7771	-1

Quarks spin = 1/2

Flavor	Mass (MeV/c ²)	Electric charge
U up	0.002	2/3
D down	0.005	-1/3
C charm	1.3	2/3
S strange	0.1	-1/3
T top	175	2/3
B bottom	4.3	-1/3

Structure within the Atom

BOSONS

Unified Electroweak spin = 1

Name	Mass (GeV/c ²)	Electric charge
γ photon	0	0
W^\pm	80.4	-1
Z^0	91.1876	0

Force carriers spin = 0, 1, 2, ...

Name	Mass (GeV/c ²)	Electric charge
g gluon	0	0

PROPERTIES OF THE INTERACTIONS

Property	Gravitational	Strong	Electroweak	Strong	St-Strong
Mediator	Graviton	Quarks, Leptons	Electric Charge	Color Charge	Mediators
Particles participating	All	Quarks, Leptons	Electrically charged	Quarks, Gluons	Mediators
Particles mediating	Graviton	W^\pm, Z^0	γ	Gluons	Mediators
Strength relative to gravity	1	10^{-11}	1	1	1
Range	infinite	10^{-16}	infinite	infinite	infinite
Force problems in nature	infinite	10^{-16}	infinite	infinite	infinite

The complexity is mind-boggling. That is not the problem as long as there is coherence, but it is not coherent, and many scientists are open about this and need to be heard. It is not difficult to list multiple incoherencies, but these have not inspired the community of particle physicists yet to start all over in modeling. To revalidate and harmonize the assumptions and first principles.

Not to renormalize but to normalize.

So, why The Dutch Paradigm?

Because we need clarity, and we must educate our youngsters with better and more coherent theories.

I have worked extensively on creating new particle physics models from a holistic view while respecting the last century's initiatives and experimental results. Starting from a minimum of assumptions and without virtual parts or weird metaphysics, I have tried to find coherence

in what has been reported empirically and which ideas were recorded at the time.

Indeed, you can say that I could stand on the shoulders of many great scientists who recorded their thinking in their time. I was allowed to look over their shoulders and recorded what I see and absorb in my thinking. I have had the opportunity to develop holistic concepts, not hindered by a particle physics career. I do not need to agree in advance with long-standing and respected beliefs enshrined in the particle physics curricula.

I certainly was sometimes a bit naive. But more, it was amazing because I still do not fully understand why I managed to oversee a huge part of the physical image to the level that is logically viable and allows calculation of the causal relationships in models from the Big Bang to the macrocosmic atomic model.

When describing The Dutch Paradigm, I have indicated the specific assumptions. These assumptions can be mirrored with other theories' sets of assumptions. I applied Occam's razor to reduce and limit complexity in prevailing assumptions.

I will continue to think along these paths because I am convinced that eventually, the Dutch Paradigm models will find their way and feed the thinking of free thinkers.

Hopefully, it will inspire young students to master the physical world's coherence of realities.

4. (HIDDEN) PHILOSOPHIC ASSUMPTIONS

At the beginning of the last century, famous and well-known scientists explained their ideas and converted them into theories. The motives and perspectives of what “truth” is, from which they accomplished their work, were subjective and, consequently, specific. At best, it can be a part of what is true. Almost one hundred years later, it isn't easy to put ourselves in their perspective in thinking. We have no proper insight into what was linked to information derived from other scientists' work and ontological approach in their groundbreaking thinking.

Ontology:

Ontology examines and describes the properties, or more broadly, being the whole of things, "entities," or beings, which are believed to exist or rather are. Classical ontology then tries, based on their properties, to divide entities into fundamental categories.

Where particle physicists referred to point particles, then this was not based on a clear concept anymore. Mathematically, the idea of point particles can be seen as an auxiliary concept that considers a property to be concentrated in the mathematically determined center. If Newton wants to indicate an object's mass with M , then all parts contributing to that M are considered in the “center of gravity.”

A point particle could also be seen as an entity, as indicated ontologically above. It is then a point in space that has properties but no spatial extension. We can only perceive the manifestations of such an entity.

A manifestation is an act of becoming manifest, to become perceptible to the senses.



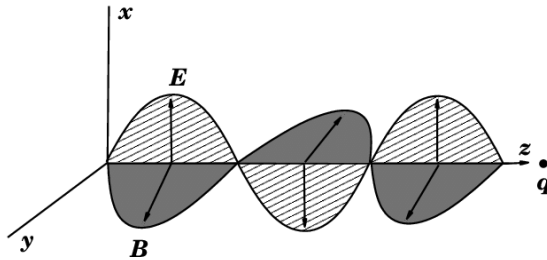
The footprints on the beach are manifestations of the history of a human being walking on the beach, and the wave pattern indicates the tide coming in and out on the shore.

As for point particles, such an entity can manifest itself through a wave. But the sensorial perception of a wave needs a medium that reflects and preserves the manifestation's imprint for some time. In the figure above, we have no information about the actual position of the human walking on the beach. Still, we interpret such an image – while being a frozen picture – as a manifestation in time.

The prevailing model of a point particle acting as or even being a wave requires clarification on what is meant.

We observe a wave as it behaves and presents itself in water. A wave is, thereby, a manifestation in time in a suitable medium.

That idea was transferred into the wave character of a photon, as visualized in this figure.



We cannot observe the photon wave, but the wave can be deduced from the mathematical relationship over time. This wave is based on an assumed causal relationship. The causality is a reflection in thinking on the perceivable manifestations in time. It is not based on overall instant sensorial observation but a succession of observations of manifestations in time. It is unlike observing the footsteps in the sand. Is the time assumed to be a continuous dimension or a reflection of the high frequent renewal of instant awareness? Is human thinking about perceived images assumed to reflect events on an assumed imaginative continuous timeline, or is it adding perceptions to the historical line in our thinking – in our memory - to understand the actual observation better?

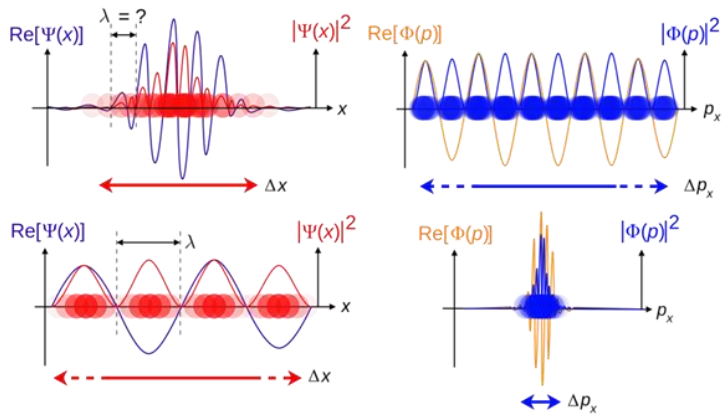
Then, if there is a medium, what is that medium?

Do we observe such a medium? Do the properties of a point particle need a medium to manifest themselves? If so, has that medium tactile properties? Those manifestations cause energy transitions. Where does that energy come from? Is it bound to the point particle, or is it in a field? The Higgs field's idea is based on the assumption that there is a “field” throughout space with the same properties everywhere, irrespective of time and place. The energy is a property of that field. The Higgs boson is the assumed carrier to trigger the energy in the field. An expanding space then requires extra energy for supporting expanding fields. Or are these fields only active at a very close distance, at the quantum level? Are those quantum fields also assumed to be spatially curved?

We have a good idea about the Maxwell equations.

These equations apply the simple wave logic, as illustrated above. They provide a framework for the technical application of electricity for propulsion.

But in the infinitely small world, and in combining the ideas from different particle energy fields, this isn't easy to grasp, as is illustrated in the next figure. It is an attempt to visualize the events of a point particle while moving on in its field.



Ref. Maschen

The complexity in understanding empirical information of a single point particle does not comply with the Maxwell equations' logic.

Questions about symmetry also play a role in the thinking of many scientists. The starting point is symmetry and the possibility of annihilation. Each particle then has an anti-particle. If a deviation in the symmetry is found somewhere, this gives cause to look for the missing part. Asymmetry is generally rejected as a basic characteristic feature.

According to Immanuel Kant, this is all nonsense; nature is what it is and does not care much about our thinking.

What is kinetic energy, and how is it “stored” in an object that shows “mass?” How do we know the amount of accumulated kinetic energy in an object relative to its propagation history since its creation?

Studying a theory requires the capacity to empathize with the ideas and perceptions of the inventor's reality. This perception of reality is not alike for all famous small-particle physicists. That is why, even with impressive theories, there is a need for techniques to massage away the conflicts in assumptions in between theories. Making things “normal again,” renormalization techniques. It is like a mathematical treatment to keep relationships referring to point particles out of considerations referring to infinity.

I quote Wikipedia:

Self-interactions in classical physics

The problem of infinities was first encountered in the classical electrodynamics of point particles in the 19th and early 20th centuries. The electric field of an electron contains electrostatic energy, and the equivalence between mass and energy means that this field would contribute to the effective mass of the electron. Now the energy of the field around a charged hollow sphere of charge q and with radius r_e is equal to

$$E_{\text{em}} = \frac{q^2}{4\pi\epsilon_0 r_e}$$

Now an electron is a point particle so that the radius r_e is zero. The energy then becomes infinite. The total effective mass of the electron consists of the sum of the mass without the electrical energy (the "bare mass") plus the contribution of the electric field. If we postulate that the bare mass is negative, it

would be possible to ensure that the limit $r_e \rightarrow 0$ is the correct value. This is called renormalization, and Lorentz and Abraham based a classical theory of the electron on it. This early work was the inspiration for later attempts at regularization and renormalization of quantum field theories. When calculating electromagnetic interactions of charged particles, it is tempting to ignore the recoil of the field from the particle itself. This recoil is necessary to explain the friction that a charged particle experiences when radiating radiation. If an electron is assumed to be a point, the recoil value will diverge for the same reason that the mass diverges: the field close to the electron becomes infinitely large. The Abraham-Lorentz force contained a non-causal "front acceleration." Sometimes an electron would start moving before any force acts on it. This is a sign that the point limit is not consistent. A finite-sized body will begin to move if a force is applied within one radius of the center of mass.

The problem was worse in classical field theory than in quantum field theory because in quantum field theory, a charged particle can fluctuate in an antiparticle. This antiparticle has an opposite charge, and the fluctuations are spread over a region of size approximately the Compton wavelength. In quantum electrodynamics, with sufficiently small coupling, the electromagnetic mass will only diverge as the logarithm of the particle's radius. Quite a few physicists believe that if the fine structure constant was much greater than unity and that the classical electron beam is greater than the quantum mechanical wavelength, the same problems of classical theory will still occur in the quantum version.

Here various concepts, theories, and mathematical formulations meet:

- Electric field
- Electron

- Electrostatic energy
- Point particle
- Equivalence of mass and energy
- Effective mass of the electron
- Field around a charged hollow sphere of charge
- Total effective mass
- Naked mass
- Negative naked mass
- Quantum fields.
- And so on

There is a world of thinking behind each of these concepts. There is no validation or renormalization into a mutual or intertwined understanding of all these notions.

These concepts refer to sensory perceptions that have been processed through imagining and subsequent modeling to discover causality. The causality is translated in a mathematical format to enable third-party validation. A concept such as electrostatic energy is typically classic. It is based on a macrocosmic observation. It describes a field that "exists" but requires no energy for its maintenance throughout its lifetime. How do you imagine that? Well, Lorentz and Abraham understood from Einstein that mass and energy are equivalent and thought that the electrostatic field was probably a manifestation of mass. Not all mass, because that is mathematically not correct. Moreover, the electrostatic field was thought to be infinitely extensive. It would then contain an infinite amount of energy, even if you imagine a limitation by assuming a mass equivalent's fixed arithmetic value. Call it a static field, and then you prevent that. Problem solved. Yet, it is assigned an arithmetic value, which is a

contradictory assumption, an arbitrary matter. It is difficult for a static field to extend indefinitely, with a fixed energetic content for maintenance, especially now that we know that the universe is expanding.

But Lorentz and Abraham did not know of an expanding universe.

Whether this effect of expanding is included in renormalization nowadays is unknown for me, but this can mathematically be done. It is “just” adjusting the number assigned to a negative mass. However, that is not possible because then the electron's energetic content has to be a variable. It just does not match. This whole reasoning of the energetic content of a field is also at odds with Einstein's well-known law $E = mc^2$ because that refers to the measurable value of mass.

Still, we handle mass in our habitat as a measurable value of a property and use it for practical purposes. We do not know the history of acquiring the absolute speed and direction of the speed of this mass while it is moving through space. Not knowing this history is within our habitat, not a problem driving a car and flying a plane. The solution is apparently to divide speed into a relativistic and non-relativistic range. Mass is by design isotropic, but speed is anisotropic, so how do you fix that duality? When something moving slowly, the conversion from mass to energy plays a “negligible” role. Again, for practical purposes, we can work under earthly conditions with a differential speed of objects. No problem.

Working with fields is also closely related to whether the energy of a point particle as defined in the Standard Model, is an inherent property of the point particle itself or that of the field. What is the distinction that we must make between quantum physics and classical physics? Quantum physics is based on quantum energy bound to a point particle. For classical fields, force-carrying particles are postulated that can only manifest energy transitions in their field. Are those classical fields quantized or continuous?

The models of what is a field, as what is mass, and the nature of the electron as a point particle, space-time curvature, and the like ought to be interconnected, but this is not yet possible. Almost everything has become subject to a mixture of different contributions in theories, side paths to avoid problems, arbitrary decisions, and all to reduce the actual perception to a nexus that – unfortunately - we still do not find for an overall holistic causality.

But Lorentz and Abraham, and so many other famous scientists at their time, were not totally aware of these problems.

It also indicates that there is a way for every problem to work around conflicts. As you can also read here, one needs to distinguish between classical and quantum fields. We assume that working with negative energy and negative mass is mathematically permissible. No idea what that means in an ontological sense. It is Richard Feynman's way to use metaphysics if we cannot develop a suitable renormalization technique. It is difficult for an outsider to follow the mixture of perception, assumptions, renormalization, and metaphysics, certainly and even more when it claims to represent consistency and causality. It is a futile effort for me to highlight all perceived inconsistencies intertwined in the array of theories. For me, it does not contribute to truth-finding.

It might even well be that remarks, as stated above, will be assessed as a reflection of my lack of understanding of very sophisticated models.

I am expressing these considerations, not to put the thinking of the many Nobel Prize winners in a bad light. I aim to emphasize that I – personally - feel the need to rearrange everything we now have available in observations, including the metric data, to discover holistic causality. To do so, it is important to scrutinize all the empirically obtained information thoroughly, and I have done that without upfront accepting metaphysics, renormalization, and supersymmetry.

It was the starting point of what emerged to become a new paradigm.

I am convinced - and I think rightly so - that I made some mistakes in understanding all of what has been observed and the metric values. It would really be a blessing if others would carry this further from their knowledge and brainpower. Nevertheless, I am also convinced that this will not falsify The Dutch Paradigm.

So far, The Dutch Paradigm so far was a lonely ride for me in new territory.

But a fascinating ride and with only limited obstacles on the road.

Most obstacles on that road were self-induced. As a human person I need to distinguish perceived physical reality from the process of transforming the sensory information into the understanding of the meaningful content. A meaningful content that is satisfactory in my personal thinking and appreciation by triggering my will to act.

The next chapter is about trying to understand this issue of transformation. It will concentrate on unraveling the physical reality only.

What does this physical reality teach us, and where and when do I start landscaping it into images by my thinking?

5. A VIEW OF REALITY

As described in the foregoing chapter, The Dutch Paradigm calls for a paradigm change in the prevailing way of thinking about constructing the sensory illusion of physical reality.

To quote Thomas Kuhn on paradigm shift:

Kuhn argues that no serious falsification is tolerated during the period of proving the prevailing paradigm's right, while during a paradigm shift or scientific revolution; no reasonable discussion between old and new paradigms is possible.

The Dutch Paradigm calls for a paradigm change that is less revolutionary than what is mentioned by Thomas Kuhn in his book *The Structure of Scientific Revolutions* issued in 1962. Proving that The Dutch Paradigm models represent perceived physical reality through time, requires an understanding of the sensory observation principles. Human beings are exposed to a high frequent renewal of illusions in “now” positions of free electric quanta. Free electric quanta as being the physical manifestations of entities. The human being perceives this high frequent renewal as a physical reality. A physical reality that is the amalgamation of these exposures to these illusions over time. Perceived in objective images while being created in mind by adding a timeline with projections based on our short term memory. In the realm of understanding physical reality, indeed, a paradigm change is required to accept the results of thinking as conclusive for validation of a theory regarding particle physics. The Dutch Paradigm refers to the dodecahedron structure's logic, but we will never actually see the dodecahedron structure. We can imagine the construct of the dodecahedron resulting from twelve electrons' interferences in due time, in many "now" exposures. This understanding is extended in The Dutch Paradigm to the ultimate atomic structure. The logic understanding through thinking, the perceived causality in the illusions, allows us to

ultimately imagine the physical “reality” as the outcome of sensory observation of monistic phenomena.

A physical reality in which we participate with our mind and the human body allows us based on our subjective intentions to modify perceived reality by action.

Mainstream particle physics is referred to as Big Science. It is a costly affair because it is very capital-intensive to validate the relevant theories empirically. Particle physicists are searching for mass and gravity and are not illusionists. Unfortunately, one cannot find mass when it does not exist at the monistic level.

The current paradigm in particle physics is, without reasonable doubt, in crisis to describe metric observations in their causal relationship with mathematical equations that are valid irrespective of time, place, and scale. Despite the impressive machines available for research like the Large Hadron Collider, there is only rather limited progress in understanding the basics of the so-called physical world we live in. The quantum world, the human understanding of physical reality and the observable cosmos are assumed to be made out of the same fabric, but why do we not make substantial progress in finding out how this can result from material assumptions like mass?

I do not need to explain this further. Nevertheless, there is indeed no reasonable discussion possible between old and new paradigm during a scientific revolution. It can be avoided because there is still the Copenhagen interpretation available for practical applications and, therefore, no urgent need to upgrade the prevailing paradigm. This Copenhagen interpretation is accepted as the objective base for laws of nature. We very well understand the outcome of the sensory observations and imaginations in causality. Observation at a framerate of 50 - 60 frames per second is adequate. But it is not conclusive and does not allow the unraveling of mysteries hidden in the illusion on the level of the entities or point particles if you like.

I have good reasons to recommend the validation that the electron – even in the Copenhagen interpretation - is not an elementary particle but a construct. It is central to the basic findings of The Dutch Paradigm. Also, the electron is pivotal in building the constructs neutron and proton.

The idea of an electron as an elementary particle is burned in our brains through education. It is undisputed. It is not recognized anymore that declaring the electron a point particle is based on an arbitrary compromise to end a profound discussion on understanding the electron's conflicting properties. It had not much to do with elaborated experimental research through Big Science. Bringing this issue up again has no priority and will close the door for scientific discussion. It is not a disputed issue, period.

I can't do much else than accept that door closed for now.

It gives me another intellectual stimulus to elaborate on the new paradigm. It releases me from the obligation to participate in unproductive discussions about alternative ways to intertwine the prevailing paradigm into a holistic view or Theory of Everything.

There are ample numbers of scientists who express doubts about the current consensus, and many good arguments are presented. However, there is no emerging new paradigm available yet, mainly because the discussions are fragmentary. There is no philosophical holistic overview widely accepted within the established peer group of scientists. There is no common reference, such as humankind used to have in books of faith, the Bible, and the Koran, right or wrong. The common denominator is more confusion in thinking despite ongoing huge investments in research. More confusion could also and eventually result in valuable progress and deliver collateral findings, who knows. It is not all wasted money.

I can afford myself the scientific freedom to develop The Dutch Paradigm to explore the underlying thought process's findings in more detail. I consider the first book, The Dutch Paradigm, to sufficiently

explain this pure thinking relative to the current paradigm. It is not amending the prevailing paradigm; it is a recalibration towards holistic consideration and thinking, with unexpected impressive results.

As in the book *The Dutch Paradigm*, the description mentions several aspects that can stimulate further elucidation. They are mentioned because they might trigger further insights based on holistic thinking.

With every step in holistic thinking, we must bear in mind that each image we “see” is an addition in time of photons that have interfered within our retina at a frequency of 10^{14} Hz. The interferences feed into preparing an image of what we consciously see at a frame rate of only some 50-60 frames per second. This means that we do not see a single image but a collection of images in superposition. In essence our thinking is the medium in which the manifestations are preserved in time. It is the sand on the beach and the tidal wave as the eraser.

A superposition of what happened during approx. 0,02 sec.

For the human appreciation, this is a short period of time but related to the Planck time of 10^{-44} sec, a massive number of 10^{43} fast-changing images superimposed into one image each approx. 0,02 sec. We know this by example. If we look at the rotor blades of a helicopter in flight, we cannot visually identify the blades. We need stroboscopic illumination to reduce the number of images and bring the rotor blades in any thinkable visible standstill position.

We need to understand physical reality when we interpret images presented to us in the physical reality's sensory impression, direct or indirect, via instruments.

The scientific rethinking in *The Dutch Paradigm* concerns considerations about the microscopic small and huge phenomena. We are all aware of these extremes, but both realms are outside our human abilities for direct and detailed physical, sensorial observation. Also, new insights in particle physics will not impact our practical physical life on short notice. The Copenhagen interpretation still makes sense. We can live and

develop our physical lives within the well-known macrocosmic laws' considerations. Sensorial information is mentally perceived at a frame rate of 50-60 frames per second, in a world that can be influenced by our physical capabilities to act and rearrange spatial positions of objects.

The Dutch Paradigm does not reveal progress towards hope for time travel or eternal physical life. The findings, though, indicate an intriguing potential for information exchange between entities regarding space and time perception. Entities that also build in gigantic numbers our bodily physicality.

The age-old saying of Socrates: Know thyself, becomes accessible again as a stimulant for research.

My thinking follows the entities' fate after release at the Big Bang, including the formation of atomic structures. These entities interfere and exhibit observable manifestations and interferences. The starting point can be referred to as physical monistic. Whenever a group of entities forms in due time with their manifestations of free electric quants into an object that can be sensorial identified by human beings as a recognizable object, even then, it is still a monistic unintentional formation.

If there is an issue of potential dualism, then this is due to the human being's impact - or, more broadly, the living beings - to act in the perceived physical reality. The human in action perceives the physical world as a tangible and visible reality, irrespective that no evidence is found for tangibility at the entities' level. So, we can make an artificial object and physically act within the constraints of interfering free electric quants of (massive amounts of) entities to reshaping into whatever we like.

The sensory impressions of the manifestations of entities are the basis for research into unraveling assumed causal relationships. The monistic reality reveals intangible phenomena only. In this sense, this monistic reality follows the views of Immanuel Kant. The search for unraveling causality is a human activity through thinking. The thinking process is

not part of the observable physical reality. In essence, it is philosophy. Therefore, The Dutch Paradigm does not change the perception of physical reality. It changes our humanly thinking about reality. We are the living medium that allows the physical reality to be comprehended.

Telescopes like the Hubble deliver visual information in high definition to observe stars and galaxies. For processing that information for the thinking process, mathematical operations must emulate the information into a local perception that can trigger a causal understanding of ideas. We try to understand what presently does not exist anymore. Physically and monistic, this is a futile effort. It represents by using a telescope the concentration of a number– a higher density - of photons interfering in the eye's retina. Still, we are fascinated by what we see, and we want to explore what we can learn from it.

Why are we exposed to these images?

The general theory of relativity is a typically dual source of assistance for understanding physical reality. The one-tier world does not care about our perception problem. Causality is independent of location and time, but we have concluded that the sensory perception of causality depends on the conditions in which the observer finds himself in place and time concerning events far away from him, in place and time. In a metaphor, you could say that we mathematically adjust our senses to a distantly unfolding causality, as we do locally by, for example, putting on glasses to ensure focus. In this case, we use a telescope that we need to correct for sensory imaging to space-time. Therefore, it is phenomenologically incorrect to link this correction to an influence in the monistic settlement of assumed local causality. A phenomenon like a gravitational lens is not the result of a time-space curvature. Space is not an entity that can “grow” independently and be considered full of ever-growing energy in expanding fields. The same can be said of time. It is the high-frequency adjustment of the “now” experience. Even the term high-frequency already belongs to the instruments of the dual operating person. In our thinking, we attach the perception of time to that change of the present

moment, the “now.” This “now” is not aware of our perception of a timeframe.

I will not elaborate on dualism and monism. Plato and Aristotle, and Kant have done this for us and passed on deep thinking results for our considerations.

Having said this, of course, I do use the sensory impressions of the human being. It is fascinating, and we try to understand what is presented to us at the several levels of density in monistic manifestations and interferences. Still, I must try to keep the impressions pure. Reduce delusion by distance and time and metaphysical interpretation to study the monistic phenomena as precisely as possible. In other words, as a person, I have dual qualities in myself through my thinking, feeling, and wanting. I think, therefore, I am. However, as a dual-acting actor, I have only limited awareness of who I am. Certainly, I lack the competence to comprehend the reason for my being in this physical world. But is it possible to understand what this monistic operating world can teach us? Know thyself, Socrates once said. Easy to be said, difficult to understand.

In this book's context, I will regularly refer to the terminology of the dual thinking person. However, this is only intended to be able to use the terms with which the phenomena are named to transfer insights. To understand the imprint of physical reality in our thinking. Whenever required, I will try to explain matters to avoid confusion between the monistic world and the dual interpretation of this world.

6. A VIEW OF REALITY CONTINUED

In the previous chapter, I stated:

As a person, I have dual qualities in myself through my thinking, feeling, and wanting. I think, therefore, I am. However, as a dual-acting being, I have only limited awareness of who I am. Certainly, I lack the competence to comprehend the reason for my being in this physical world. But is it possible to understand what this monistic operating world can teach us? Know thyself, Socrates once said. Easy to be said, difficult to understand.

A person indeed gets the sensory information value-free via photon interference on his retina. He can process this information into an array of images at 50-60 frames per second and appraise them through a combined objective and subjective understanding of the images' content. He will recognize the images based on his visual memory. His visual memory as the medium for imprints.

Once recognized, he will trigger different layers of consciousness in a further act of appraisal. The conscious appraisal is based on a reflection of a system of values that the observer - the subject - has mastered concerning the image's content. He likes or dislikes what he sees. The image presented can leave him sympathetic, antipathetic, or indifferent. Adding a subjective appraisal is independent of the causality underlying the perceived image of the physical world. It reflects our appreciation as at the personnel level, it is subjective.

Subsequently, the human being can feel inspired to act based on physical reality. The physical world can also, to a certain extent, facilitate the actions of a person. Reality is also, to a certain extent, physically pliable to respond to his wishes. This pliability allows us to develop technical applications of our understanding of ongoing causality in what we

observe. But, the contraptions we make will decay. Unforeseen events will happen, and we learn by doing. Hidden assumptions will pop up and must be addressed.

We cannot force the physical world to change indefinitely. Our contraptions will decay. The physical reality unconsciously acts as the value-free objective corrector of incorrect or incomplete ideas. From a scientific point of view, we need to study what is causing malfunction and decay. Thinking must be iteratively strengthened and refined through experiments. We observe, appraise, and act in the physical world in which we are present. We think and learn on the job by doing.

We miss the value-free objective correction on the human intervention based on our subjective thinking and feeling in assessing what we can distill in causal coherence by observing the galaxies and subatomic objects, the macro and microcosm. In essence, we cannot physically be active in these realms. The investigation to conclude causal relations based on observations in the extremes is immensely complex and, therefore, practically divided into scientific research topics. The view of the holistic coherence is blurred. Still, the large objects have to be built logically from the small, and we want to know and understand all about the small world. What are the fundamental or elementary particles and forces driving the physical world?

We try to convince each other scientifically that there must be many elementary or fundamental particles to interpret our observations. A jumble of elementary particles has been experimentally identified, while what we were looking for, especially the carrier of mass has still not been found. The complexity is constantly increasing in the last decades with the notion of dark energy and dark mass and black holes. In due time we may expect to find suggestions of decay of that dark mass to phenomena of dark energy, dark stars, and dark anti-matter, all with invariant mass. At the same time, a proton is sometimes described as a bucket full of rubbish. Cosmic rubble?

It is obvious that we still lack a coherent view of particle physics.

These considerations prompted me at the time to go back to the source: the conceivable conditions under which the Big Bang could have taken place.

7. EXPLANATION OF THE DUTCH PARADIGM'S VIEW OF THE BIG BANG

The Dutch Paradigm provides a specific phenomenological interpretation of the Big Bang.

Strictly speaking, we cannot process the Big Bang into an image based on sensory perception. We observe that the distant galaxies are moving away from us or away from other galaxies. That triggered the idea that the universe is expanding.

Around 1930 it was widely accepted that the galaxies must have a history of origin. Logic demands a beginning, and we attribute that to an event called the Big Bang.

Cosmic background radiation was discovered in 1964. This is seen as the first observable phenomenon of the historic Big Bang and provides a solid foundation for the notion that everything that physically surrounds humanity finds its origin in that event, the Big Bang.

The name Big Bang is thereby rather suggestive. Though Fred Hoyle coined this name, he was in regret about the impact of the name. A “Bang” triggers the mind towards the suggestion of an enormous uncontrolled, explosive outburst of energy. Hoyle certainly did not intend to convey such a message. But once a name is given, it isn't easy to adjust the obvious interpretation.

Mirroring that primal event to particle physics' evolving models opened a scientifically gigantic task. The Big Bang's causal development had to be understood in deterministic logic to enable scientists to relate identified and listed elementary particles and forces to conditions present at the Big Bang event.

What progress is made to unravel the mysteries up to and including the event of the Big Bang?

It is a popular claim that particle physics is at the brink of explaining the last mysteries of what happened in the first part of a second after the Big Bang. The prevailing paradigm pretends that the scientific knowledge is logically consistent from 10^{-13} sec after the Big Bang onwards. Furthermore, there are specific presumptions about what occurred in the time span between 10^{-43} sec and 10^{-13} sec. It is generally accepted, though, that there is no clue what happened in the first period up to 10^{-43} sec. It is anybody's guess, and, therefore, it is speculative.

Well, if so, then there is room for The Dutch Paradigm to suggest a specific set of assumptions.

I performed a thinking exercise based on intuition starting from the origin and the first period up to 10^{-43} sec.

I assume that before the Big Bang event, there might have been an infinite number of entities available, all without spatial extension and projected to be in a singularity. In the singularity, the entities cannot show spatial manifestations that differentiate them from one another.

The singularity and its content of entities are simply not within the physical reality.

The physical reality as is observable for us as human beings participating in the physical world.

I use the notion entity rather than point particle. The name "particle" triggers the idea of spatial extension and properties, and though one can avoid this by stating "point particle," it is suggestive. In The Dutch Paradigm:

An entity exists by itself: something separate from other things.

If, for any reason, a reader still wishes to avoid the word "entity" for ontological reasons, he or she is free to use the term "virtual part" or "point particle."

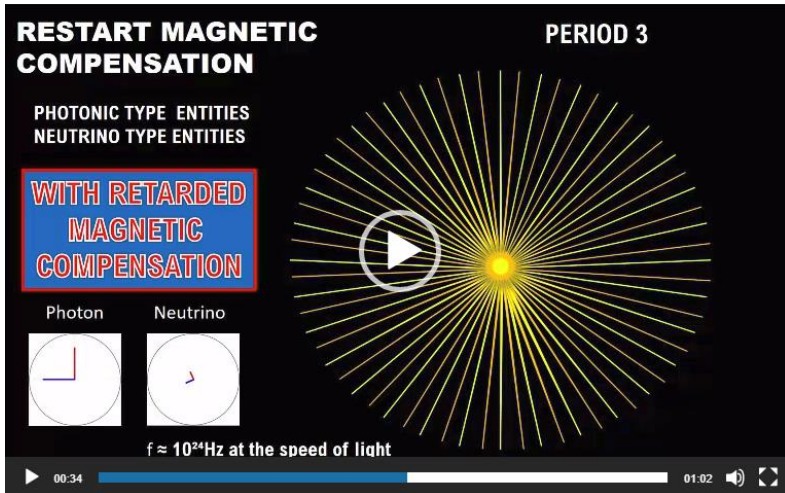
The cosmic background radiation is, for the human being, the first noticeable spatial observable manifestation after the Big Bang event. We are unable - so far - to prove the actual existence of spatial manifestations of entities before the cosmic background radiation. There is also no indication of a specific position in space as the center of the Big Bang origin. If the entities were active, they were obviously unobservable. In fact, one may assume they had only the potential to become observable in their manifestations. It is similar to potential energy.

I fully accept that it is metaphysical to assume that a virtually infinite number of perfectly identical entities were somewhere locked in a singularity.

All up to the Big Bang event, each entity was thereby in full and perfect internal compensation of its potential electromagnetic manifestations. Because this is virtual, it cannot be proven directly to be right. Dutch Paradigm states this as a postulate. It might be appreciated as yet as another speculative line of thinking. So be it.

This postulate is the basis of the thinking exercise that led to The Dutch Paradigm. The postulate is further described in chapters 2 and 15 of the book The Dutch Paradigm.

What might have happened at the Big Bang event could have been a short disruption of the above said full and perfect compensation of potential manifestations.



<http://thedutchparadigm.org/13-2/general-idea-of-the-big-bang-2/>

As proclaimed, it is quite conceivable that the Big Bang originated from a singularity. The Dutch Paradigm, to arrive at this concept, has intrinsically believed that the fruits of many outstanding scientific achievements must already have potentially been available in the idea of the single type perfect entity. Therefore,

The Dutch Paradigm assumes that the ideas reflected in the Standard Model must have their origin in the perfect entities' manifestations.

The widespread speculative assumption in mainstream particle physics is that there was, prior to the Big Bang event, a position in time and space with enormous accumulated energy. Energy, linked to an infinite amount of point particles concentrated in a small volume.

What this energy triggered to “explode” is an inherent mystery.

The Dutch Paradigm assumes that the entities in a singularity were out of time and space.

Unaware of our human experience of space and time, there was only the potential to become observable. The carriers of the virtual properties are referred to as entities.

The Big Bang apparently gives the entities identity.

After the Big Bang, the entities identify themselves in space and time in sensory perceptible properties. The electromagnetic system of each entity becomes identifiable.

Before the Big Bang, two distinct properties are potentially active in the state of singularity: (i) one for the spatial conservation in a single singularity, which I call the “magnetic property,” and (ii) the property that potentially provides for the displacement of a single entity and thus the experience of time and space. I call this the electrical property.

The electrical property is leading, and the magnetic property is compensating. The electrical property is potential explosive, able to create time and space. The magnetic property is implosive. Both manifestations are instantaneously interacting within the singularity and cannot be perceived by the human senses. All entities are identical in terms of these two properties.

The entities are mutually inert in the singularity, incapable of interfering with and between one another.

Assumable, at the occasion of the Big Bang, the potential to keep all entities spatially inert was discontinued during an extremely short period. The time period of discontinuation is set at the 1 Planck period.

In this perfect symmetry situation, a disturbance has occurred, which I have referred to as “the temporary interruption during the 1 Planck period of the electromagnetic system's magnetic component. “

After the 1 Planck period's interruption, the magnetic compensation resumes, and the entities will become observable and dispersed in space.

The observability is due to the release of an uncompensated *free electric quant* of the electric manifestation. The free electric quant of each entity will remain uncompensated as from the moment of the Big Bang. All entities released in space show, therefore, an individual position in place and time.

The observable physical world emerged.

After the restart of the magnetic compensation, we can recognize two forms with which an entity can manifest and identify itself in space. One is referred to as a photon and the other as a neutrino. The manifestation of a photon and neutrino can be deduced from specifics to what we call the electromagnetic system.

We can identify that the electromagnetic system's magnetic property's characteristic is to cancel out the impulse to translate or rotate the entity's electric manifestation. Before the Big Bang, this nullification was instantaneously, but there is since this event a backlog in magnetic compensation of 1 Planck time. The entities' electromagnetic system's properties became observable through the uncompensated free electric quant's cyclic behavior.

After magnetic compensation resumes, the effects of the interruption are permanent. The entities propagate in time and space and are observable through manifestations.

The visible manifestation is the free electric quant of an entity in cyclic translation or rotation, a photon or a neutrino.

The next chapter discusses how the foregoing may be visualized by modeling.

8. THE MANIFESTATIONS BECOME POTENTIALLY OBSERVABLE

Before the Big Bang, the entities were sovereign in their potential manifestations but mutually inert.

The Big Bang starts when the magnetic compensation of the entities is temporarily adjourned. Each entity is free to exhibit its full-electric manifestation during the adjournment interval without interference with its magnetic compensation. Each entity under release out of the singularity propagates monodirectional through space by mutual Coulomb repulsion with other released entities.

The Big Bang event ends when the magnetic compensation of each entity resumes. This period may be noted as 10^{-44} sec – 1 Planck time - in our metrics to assign time.

After the Big Bang period of 1 Planck time, the entities are still sovereign, with each having their proper original electromagnetic system. For each entity, though, the aforesaid adjourned magnetic compensation during 1 Planck time resulted in the quant electric energy that escaped the instantaneous compensation.

The quant free electric energy exhibits itself as the manifestation of the free electric quant of the entity in space. It is this manifestation that makes the entity observable while propagating in space.

The entities are out of the singularity. They are dispersed in space and initially still free from interference with other entities, naked. Each and every entity becomes identifiable in position in space by its free electric quant.

The entity enters and becomes a spatial individualized participant in the physical world, more precisely, in the monistic physical world. The free electric quant can interfere with manifestations of other entities, and nothing will stop it from doing so.

Our system for sensory perception will eventually interfere with free electric quants. But we perceive the physical world in a totally different setting. The Big Bang was billions of years ago, and many things happened before I encounter myself and a lot of companions in a physical body on planet Earth. Still, we see images of what happened a long time ago.

We “see” images, and we live in a human body. These images cannot be distracted from naked photons and neutrinos just after the Big Bang.

Therefore, we need to distinguish between the monistic physical world, our human perception of it, image formation, and processing that image with thinking, feeling, and willing.

Based on his dual nature, a human being can eventually experience sensory perceptions of how these massive numbers of entities are active in space and time by mutual interferences of their free electric quants. He tries to visualize what is happening in a coherent array of successive images. There is a story to be understood. Such a coherent array of images is not available if we would observe only naked entities in time and place.

The entities do not answer questions that may arise about why this is happening. The entities function as a monistic world - they are now observable manifestations of free electric quants of entities that participate in free interactions and interferences with other entities. Nothing more, nothing less. The entities present themselves in a high frequent update of their manifestations in space.

It is all a reflection of the unknown and invisible perfection apparently available in the pre Big Bang nonphysical existence.

The Dutch Paradigm proposes the assumption that all entities are equal and equally perfect. A perfection that transcends all physical experiences

This is hardly conceivable from our human experience. We are incapable of intervening in the physical world in a perfect manner. Yet, we have been able to give this perfection a place in thinking. Mathematics will allow so. The integer system is an example of this. The number 1 is an integer number system. It can be written without a fractional component and can become a multiplicity in infinite additions, keeping unit 1 as is.

We can perform operations on the numbers like addition and multiplication.

Apparently, in the Big Bang, the ultimate unity has been released as a multiplicity of unity in dispersion. In mathematics 1 up to ∞ .

The characteristic of an absolute unity is that it is perfect, and with the short interruption, the entity has acquired a characteristic that can be experienced as a perfect imperfection. That we value this as an imperfection is, in a sense, the result of human feeling. It is not a problem for our thinking. It is a numerical processing mutation of a precisely defined unit. Still, we experience that as an imperfection in our appreciation, in our feeling as a human being, and we want to correct that imperfection in our thinking. Which reference we use is purely subjective. Together we have a feeling that the Big Bang lacks symmetry and beauty. This sense of imperfection continues to act in a subjective role in assessing what information is perceived with our senses. Remarkably, we observe the physical world based on interference with the free electric quants in our eyes while having an uncomfortable feeling that the interference is based on a disruption of symmetry. We cannot believe our eyes that this disruption actually happened.

As stated, from a monistic point of view, the Big Bang is what it is. We have to accept its consequences. As we perceive it with its roots in

multiplicity, each entity is still assumed to represent a perfect oneness that can change manifestations that eventually present images recognizable for us by thinking. Changes in the manifestations of free electric quants through interferences in time and space while preserving the basic characteristics of a perfect subset of the multiplicity. As human beings, we try to discover these basic characteristics, and emotionally, this an almost inhuman task. We try to discover these basic perfect characteristics by examining the entities' imperfections in their mutual interference with co-released entities.

In essence, we find ourselves in the physical world, representing each perfect entity's perfect imperfection. But we can only observe and act with manifestations of the perfect imperfections.

The Dutch Paradigm postulates that in the physical world, only two types of entities are observable after the Big Bang and are thus eventually will interfere with the human senses: the photon and the neutrino.

I refer to two types of entities, but I have good reasons to assume that the photon and neutrino entities are basically eigenstates of the primal entity. The primal entity that shows itself after the Big Bang in two forms of eigenstates. These two possible eigenstates are then a consequence of the electrical component's possible manifestation, which can initiate translation or rotation as equal options—the idea of two sides of one coin.

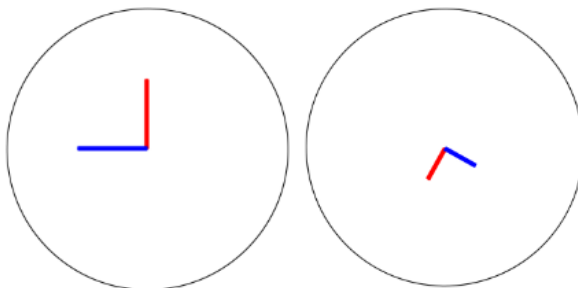
The Dutch Paradigm starts with acceptance of the photon and the neutrino as two representations of entities. This assumption of a primal entity is, therefore, not basic for The Dutch Paradigm.

It is speculative.

The idea of the coherence of the photon's and neutrino's electromagnetic manifestations in space can only be identified when we think about the sequence in recurring observable events. We need a time-line on which we can project the outcome of the thinking process.

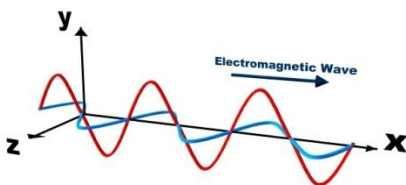
That basis is located in a reference frame as constructed by a human in his thinking process.

From the chosen reference frames with the entity as the zero point, we can represent models of the photon and the neutrino:



The animations can be found on the website under <http://thedutchparadigm.org/contact/contact/>

In these two animations, the reference frame is aligned with the axis of the lateral displacement. If we place the reference frame sideward, we can construct a different array of images in time. We recognize for the photon in the direction of displacement a historically traversed sinusoid wave as a manifestation of the electromagnetic system.

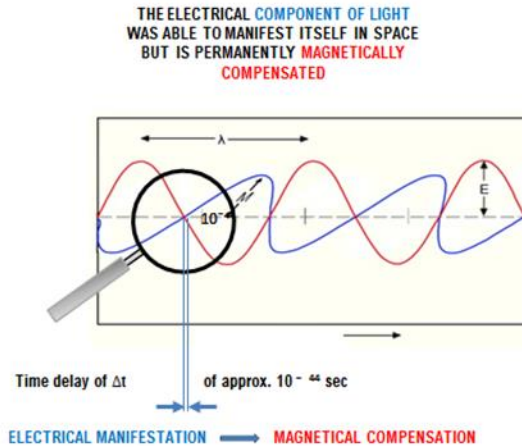


The displacement of the photon along the X-axis is at the speed of light.

The Dutch Paradigm indicates that this representation is the reconstruction of events by the act of thinking. As soon as the magnetic

compensation resumes, an endless catch-up action begins to compensate for each entity's electrical quant hf . The system's magnetic component is unable - speaking in human terms - to catch up on time. It lacks the capability to restore compensation for the free electric quant hf . The shift in time due to the 1 Planck period disruption is permanent.

In the book *The Dutch Paradigm*, this is described as follows:



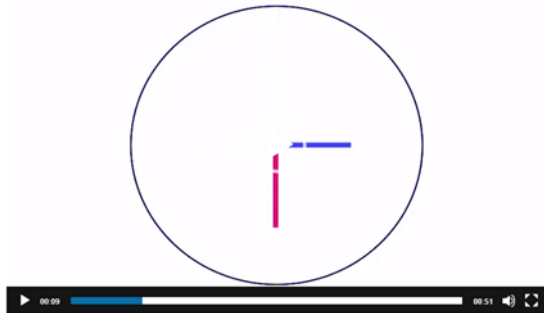
This time delay is fixed and assumed to be equal to 1 Planck time. The magnetic compensation had the capability for full compensation of the electric manifestation per entity before the Big Bang, but the magnetic component of the causal system came into a backlog of exercising this capability due to the small shift in time. The magnetic compensation is as from that moment on always too late.

It is the transformation from virtual, non-observable instant causality into time-delayed observable causality.

In the illustration, the electric component is under-compensated by the magnetic component while approaching equality and pass through zero to start an opposite behavior relative to its original character. This pattern of under- and overcompensating is perpetual. For a naked photon, the overall result is neutrality in electric and magnetic exposure to the outside world. Being electromagnetic radiation, this is a well-known characteristic of photonic light.

The total amount of free electric energy for each photon is incorporated by this small time delay of the Planck time and is relative to the wave frequency, being hf .

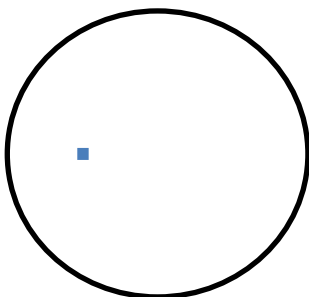
The electromagnetic system requires a metric evaluation of frequency, amplitude, and free electrical quant. This within a reference frame that, as a human observer, is considered appropriate to validate the manifestation.



<http://thedutchparadigm.org/contact/contact/>

We must understand that the free electrical quant is a free element of this system and can play a role in interferences with other photons and neutrinos.

The entity photon will then manifest itself for free interference with an updated sequence in actual positions as indicated in this animation:



<http://thedutchparadigm.org/contact/contact/>

The further construction for the causal explanation for phenomena as we perceive them in the physical world and process them in our thinking model-wise is elaborated in The Dutch Paradigm based on only these two discussed models for the photon and neutrino.

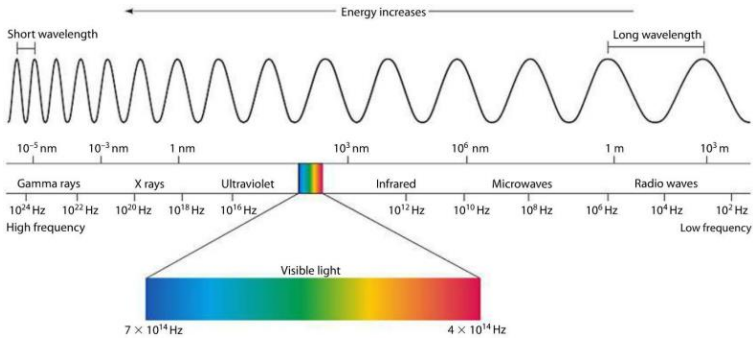
Since the photon and neutrino model's frequency and amplitude require spatial metric values in the reference frame, a construct and speed should be chosen whose dimensions are known within reasonable accuracy. These are available for the proton and the speed of light. The proton's dimensions and the speed of light are measurable.

Based on the model developed throughout The Dutch Paradigm, the starting frequency of both the photon and the neutrino can be set at approximately **10²³ Hz**. The amplitude is approximately **0,30 fm**. These values are within The Dutch Paradigm fault-tolerant concerning the causal outcomes discussed up to and including the elements' atomic structure.

9. WHY IS SO LITTLE KNOWN ABOUT THE NEUTRINO?

Entities identify after the Big Bang according to two types of eigenstates: the photon and the neutrino.

The properties of the photon are well known. The photon can exhibit frequencies that we can arrange in the electromagnetic spectrum.



The photon's electromagnetic system can exhibit a wide range of frequencies, as visualized in this figure. Visual observation is based on photon interference in the visible light section of the spectrum. The visible light section covers the range of **$7 \cdot 10^{14}$ Hz to $4 \cdot 10^{14}$ Hz**. Other frequencies are known as well and are applicable for various applications.

Knowledge of the neutrino's properties is rather limited. I am not aware of human-initiated specific applications of neutrinos. Mainstream science identifies "sources" for observing and eventually identifying and measuring properties of neutrinos. These sources are nuclear decay processes. There is in mainstream science no consensus on whether the neutrinos are released or created under decay conditions. Neutrinos show a notorious lack of capability to interfere in earthly conditions and are

therefore difficult to study. Properties of the neutrino are abstractly defined, and only limited metrics are available. There is a property called spin. Spin relates to two possible states of chirality in which neutrinos can exhibit, turning left- and right-handed. A manifestation of “mass” is known, though it is tiny. We also know that neutrinos can move through space at great speed, up to (almost) the speed of light. From the different types of nuclear decay, neutrinos are classified relative to manifestations of “mass” and included in the Standard Model as members of a neutrino family.

Curiously, it is as if neutrinos can switch identities within the family, referred to as oscillation.

It is characteristic that we have a problem understanding the reason for the very existence of the neutrino. The neutrino has apparently no impact on what we perceive in a sensory way. We do not “see” what the function of a neutrino is.

In essence, we do not understand why there are as many neutrinos as photons in the universe. Similarly, we have great difficulties in identifying a need for their existence. Observing the neutrinos in detail and behavior is virtually impossible.

Then the verdict is obvious: unknown makes unloved.

The photons feed our visual perception of the physical world. Billions of photons arrive at the speed of 299,000 km/sec into our eyes' retina and provide input for further human processing. Processing the photonic information reflects images of the physical world to the observer at a refreshing rate of some 50 - 60 frames per second.

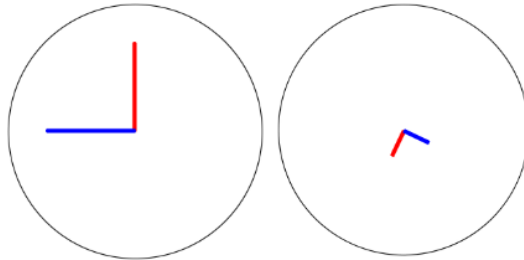
Our mind can smoothen the information into a quasi-continuous perception of the input. Also, despite this great speed of the photons, we can spatially manipulate photons.

Based on The Dutch Paradigm, it is possible to model the neutrino in analogy to the photon.

The major difference is the characteristic of the electromagnetic system. Photon manifestations translate, neutrino manifestations rotate.

This modeling is done and is described in the book *The Dutch Paradigm*. I refer to that description and repeat some of the text with further explanation.

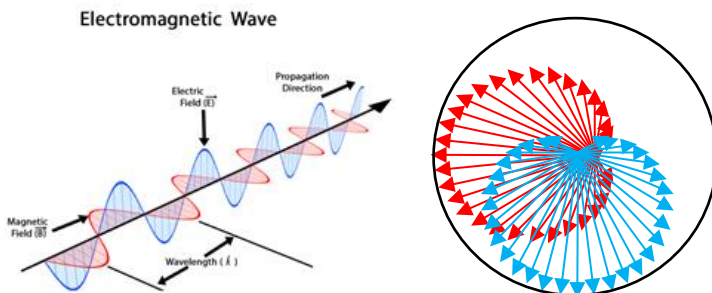
It could well be that the photon and neutrino are eigenstates of the primal entity. Both types of eigenstates manifest themselves after the Big Bang in the eigenstate as it was active at the moment of the disturbance during one Planck time.



Photon

Neutrino

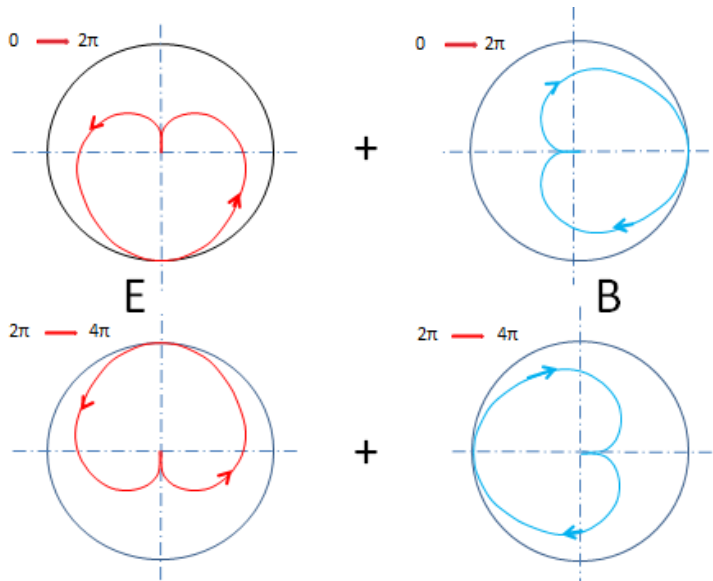
To recapitulate, the two systems can be summarized as follows:



A neutrino's electromagnetic system traverses a path known as a Pascal limaçon.

A unique feature is that a limaçon goes through $2 * 2\pi$ for a complete unwinding of a rotating sinusoidal wave.

This feature is shown graphically below:



In the simplified animations of the neutrino that have been given so far, a fixed direction of rotation is indicated.

A complete limaçon is not direction-sensitive and changes the direction of rotation when passing point zero. For the environment, this would produce an alternating picture of the left and right rotating sense of rotation of a non-rotating electromagnetic system of the neutrino.

The explanation for this can be found in the operation of the lagging magnetic compensation. The moment the free electrical manifestation, the quant, passes through point zero, the direction of rotation of the

limaçon cannot change because the magnetic compensation is overdue. The magnetic compensating manifestation passage is 1 Planck period later and thus too late to alter the sense of direction of the free electrical quant in time.

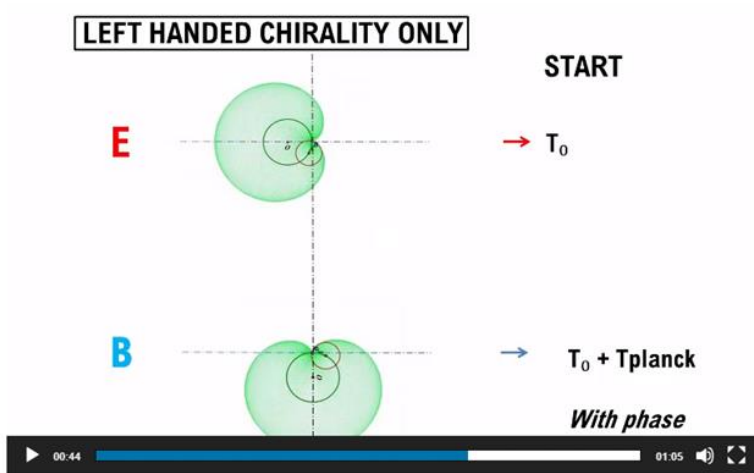
As initiated by the free electrical quant, the sinusoidal wave's unwinding continues in the same direction of rotation. Moreover, it continues to do so at a frequency of approximately 10^{23} Hz. This phenomenon is commonly recognized as **spin**.

In summary, the system functions towards the environment with a monopolar action of both components of the electromagnetic system with the same and permanent rotational direction.

For a naked neutrino, it makes sense that there is a fixed direction of rotation. It is a left-handed chirality.

The question then arises: do we find a preferred direction of rotation in the observations of neutrinos. And yes, that is being observed. In a naked neutrino, the electromagnetic system prefers counterclockwise rotation, and this is referred to as left-handed chirality. The reason for the phenomenon of preference is unknown in the prevailing paradigm and is assessed to be a not yet understood violation of the first principle of symmetry in the universe. It is also known that the direction of rotation can switch to right-handed chirality, and that is to be expected within the models of The Dutch Paradigm and will be explained. Even when that occurs, a neutrino's electromagnetic system's operation continues to exhibit the monopolar characteristic, as stated above.

An animation is shown on the website of The Dutch Paradigm in which the influence of the lagging behind of the magnetic compensation is shown.



in animation <http://thedutchparadigm.org/contact/contact/>

Pascal's limaçon is known in detail mathematically and geometrically.

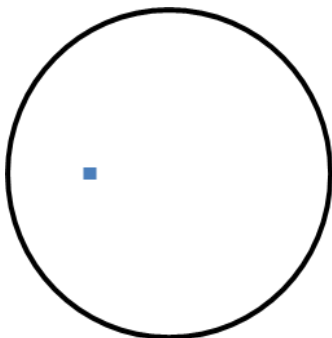
I am well aware that this model is not based on an experimental evaluation. Impressive experiments are underway to unravel the properties of the neutrino. So far, there was no neutrino model to validate the identity of the entity known.

As suggested by The Dutch Paradigm, the model for the neutrino can help to design experiments. Still, more convincing, it can be used already to understand the neutrino as one of the two constituent entities to construct the electron.

10. HOW DO YOU IDENTIFY THE SPATIAL POSITION OF THE ENTITY?

This question seems easy to answer, but it is not.

The photon at any moment of freeze in time can only be observed by its position of the free electric quant:

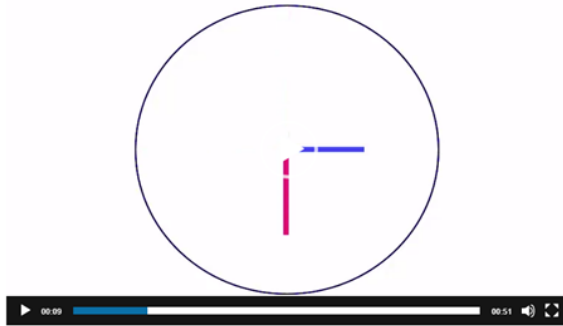


Through the manifestation of the photon's free electrical quant, we can perceive the entity photon. However, the free electric quant's position is not the actual position of the entity in space.

With an amplitude of approx. **0,30 fm**, the photon's entity can be anywhere within a circle with a radius of **1,2 fm** around the quant's position.

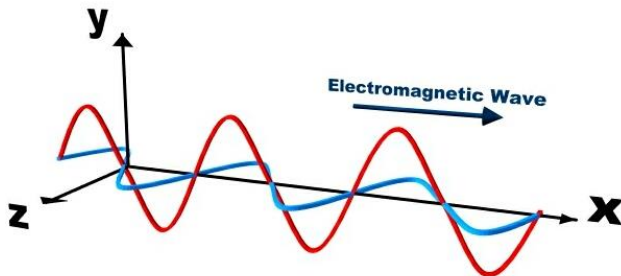
It is not possible to detect the position of the entity in that freeze of one single frame, the freeze in one NOW moment.

As explained previously, we need to consider successive frames in observation to create in our thinking an image of the photon's electromagnetic system. Only then are we to construct a historical path of the location of its manifestations and thereby the location of the photon's entity.



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or with a different choice for the reference frame:



The position of the free electric quant does not match the position of the entity

We cannot deduce the location of the entity from a single observation. We can only conclude that location from the “behavior in time” of the photon’s entity. We need to follow the path in time and place of the free electric quant to amalgamate an array of locations that allow us to understand the position and location in time of the photon’s entity. The free electric quant's behavior is linked to the entity's location, but we can

perceive the entity's location only in due time. We can only deduce in hindsight: the photon entity has followed or had to follow that trajectory.

The uncertainty of the photon's entity's location at any single moment can be considered a fundamental uncertainty. This uncertainty subsides, though when we let time run its course, we perceive additional images of successive moments in time and insert these into our thoughts.

Therefore, and again, we cannot deduce the location of the entity from a single observation. We can only conclude that location from the "behavior in time" of the photon's entity. We must observe the evolving path of the free electrical quantity in order to merge a series of locations that allow us to understand the position and location in time of the photon's entity. We can understand afterward how that process went through. The behavior of the entity photon follows the adventures that the free electric quant "experiences" in space and time.

The behavior of the free electrical quant is linked to the location of the entity, but the location of the entity can only be determined over multiple observations.

The location can only be deduced as a trajectory afterwards: the photon entity has followed the free electrical quant in time as determining for its trajectory in space.

Man can regard the uncertainty about the photon's entity's location at any instant of perception as a fundamental uncertainty. It is not the free electrical quant that follows the entity, but the other way around. The free electrical quantity is leading. This uncertainty only disappears when we let time run, and we perceive more images of successive moments in time and incorporate them into our minds. The free electrical quantity then does not spatially coincide with the entity. As humans, we learn over time.

One can say that monistic the entity is not physically there, but can be assumed by man as a reality based on his duality through thinking.

The photon's entity interferes with a free electrical quant of other entities in its path. Also the interference is erroneously identified by mainstream science in place and time as the particle character of the entity of the photon. The entity is then a point particle that would spatially coincide with the free electrical quant.

Thus, to locate the entity, we must consider the historical path of the photon entity. We must incorporate into our thinking a successive series of sensory impressions of the free electrical quantum. The historical path shows a wave character. This wave character is also incorrectly attributed to the entity of the photon and not to the time and space behavior of the free electric quant.

This is the origin of the confusion referred to as the so-called particle/wave duality

This supposed particle/wave duality behavior is experienced as mysterious. It is seen as a fundamental quality in quantum physics. In reality, this is a strictly causal system that can only be concluded by humans afterwards. He can learn why it turned out this way.

But it is no mystery at all in the monistic physical world.

There can be no doubt where the entity of the photon is at any time. The doubt is only in the perception and thinking. He first needs additional information about the trajectory of the free electrical quant over time. From this observation follows an assumed causal relationship that may become "predictable" in the future. These are essential aspects in experience that evoke far-reaching philosophical consequences. The free

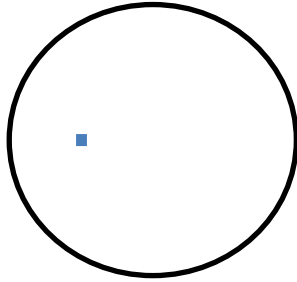
electric quant is really free, the entity follows inexorably and it is that behavior of the entity that is historically causal.

We can notice here that as humans, we still have a problem understanding the perceived information. We inevitably have to incorporate time as a dimension to enable our understanding. Its problem is associated with human thinking, collecting, and processing data in the image. We need time to understand what we "see." We create "time" as an auxiliary dimension by our time-ordered thinking and remembering.

As a metaphor, let's consider taking a snapshot of a car on the road. We can record different moments. We can apply the stroboscopic effect to the recordings. We know that a car's wheels turn clockwise when a vehicle moves from left to right, but we are surprised when we it appears on a film that the wheels sometimes turn counterclockwise and asynchronously. Confusion all over the place. How the wheels actually turned can only be deduced from the contact patch of the tire with the road. This simple example indicates that the observer may be missing information when choosing a reference frame, which is actually present without a random factor. There is no doubt to the driver of the car in which direction his wheels are turning. The entity has its place in space.

If you intuitively choose to project the reference frame's zero points onto the quant's current position, you will become really confused.

This perception problem is alike with the neutrino just as with the photon.



Even more: is this a snapshot of the position of the free electric quant of a photon or a neutrino?

The coupling of the free electric quant and the position of the entity requires a thinking operation. It cannot be concluded from a single perception as well. Therefore, even the identity of a photon or neutrino cannot be deduced from one single perception.

Only time will tell: this is a snapshot of photon or a neutrino.

The monistic physical world is a reality and does not emerge through a collapse of the uncertainty of something in that reality. We cannot observe the entities in an exposure of a single frame. Such a single frame will only show the spatial positions of the manifestations of free electric quants. This is important because the free electric quant of an entity is not the entity itself. It is nevertheless indeed responsible for an eventual interference of the entity and, therefore, impacting its trajectory. And such interference, therefore, has consequences for the position of the entity.

The creation of the trajectory path or the image of the entity is the result of considerations by a dual operating human.

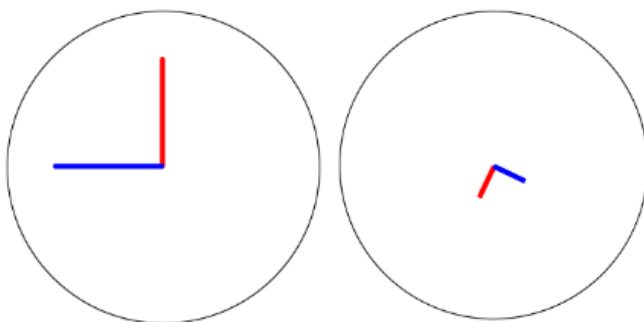
The monistic physical world is a reality and does not arise from a collapse of the uncertainty of something in that reality

11. THE NEUTRINO WILL SHOW A (TINY) MASS MANIFESTATION

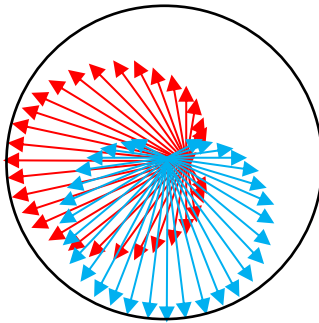
When magnetic compensation resumes after the Big Bang, both the photon's and the neutrino's entity exhibit a free electric quant. A free electric quant that escaped from a timely magnetic compensation to the annihilation of its potential impact. From that very moment, the potential repulsive impact is no longer potential anymore but becomes active in the physical world.

The free electrical quant also defines the character of the now in the physical space active electrical manifestation. The free electric quant is leading, and the electric manifestation of the entity - photon or neutrino - follows its behavior, and so does the magnetic manifestation as annihilator. The electromagnetic system of an entity is thus physically observable by its free electric quant. The free electric quant shows a characteristic sinusoid pattern in space due to the delayed pattern in magnetic compensation.

The models for the dynamically spatially active electromagnetic system of these two entities are:



The path of the free electric quant as followed in 1 cycle of the sinusoid is for the photon $4r$, where r is the radius of the circle or the amplitude of the sinusoid wave. For the neutrino, the distance traveled in one cycle of this type of limaçon - the cardioid - over 4π is also equal to $4r$. The distance traveled per cycle is, therefore, the same for both the photon and the neutrino!



This pattern, as in the figure above, is the model for the neutrino. As stated, the photon's free electric quant and the neutrino's free electric quant are "escaping" instantaneous annihilation by magnetic compensation. The "escaping" defines the pattern of disruption of the electromagnetic system due to the Big Bang as dominated by the free electric quant activity.

The photon's free electrical quant alternates along a straight section, and the free electric quant of the limaçon travels an arc section. The arc part of the neutrino limaçon and the photon's straight part are relative to each other in length to a value containing π . If both quanta of photon and neutrino travel at the speed of light after the restart of the magnetic compensation, then the frequencies of the sinusoid of the photon and limaçon of the neutrino cannot be absolutely equal. It meets the issue of squaring the circle.

The neutrino is indicated through experiments, to show a tiny mass manifestation with the best estimate of **0.04-2.56 eV**.

It is the neutrino that has a tiny mass manifestation. Therefore, it can be assumed that the neutrino entity adjusts towards a slightly lower value in the free electric quant's frequency.

Where does this "mass manifestation" originate from?

As a reminder:

The regular view in Particle Physics is that such a mass manifests itself when an elementary particle traverses its own energy field. For the neutrino, that would be the neutrino field. The neutrino would then interact with its own field, among other things, to show an energetic phenomenon that we call mass. How that field emerged after the Big Bang is unclear. The same applies to the field that the photon would traverse as its photon field.

The Dutch Paradigm postulates different causation. For the neutrino, the quant free electrical energy is reduced by a value $h\Delta f$, where Δf is the restraint in frequency, as mentioned. It is then assumed that this $h\Delta f$ converts into an equal amount of free magnetic energy associated with the entity neutrino.

The free repelling electrical quant transfers into a free attracting monopolar magnetic quant.

The free magnetic manifestation transfer is minimal, a fraction of the free electric quant's already small hf value.

This view of The Dutch Paradigm indicates that the energetic mutations are unwound within the entity and do not arise outside the entity due to a passage through an assumed "field." This applies to both the neutrino and the photon.

The difference in vision can be indicated as The Dutch Paradigm processes the energetic exchange **endogenous**, bound to the entity against the mainstream view that this exchange is **exogenous**. It is in that view assumed to take place as a consequence of passing through specific external fields. The Dutch Paradigm indicates that entities can energetically distribute their manifestations by reducing the frequency of electromagnetic systems.

The electromagnetic manifestations of a naked entity cannot change in speed, being the speed of light, but are able to do so in the frequency by which the quant and thus the electromagnetic system manifests and propagates.

In other words, the speed of propagation of the free electric quant remains the speed of light, and the backlog of the magnetic compensation remains as is, 1 Planck time.

The free electric quant leads by an interference action. If there is a reduction of the free electric quant content of energy, then this induces a reduction of the electromagnetic system's frequency. The full-electric manifestation will follow the reduced frequency, and thus the magnetic system will adjust its annihilation frequency accordingly. The magnetic compensation will show the reduced content of the free electric quant as a free magnetic quant.

In the extreme, it is conceivable that the entire free electrical quant of an entity is converted into free magnetic manifestation. The frequency Δf has then, through interactions, eventually assumed the value $f=0$ relative to the starting frequency, and under such condition, the entity loses its sinusoidal or limaçon behavior. What, in fact, can happen is a total reversal of the free electric quant into a free magnetic quant. I will not elucidate this further because that is beyond the scope of this book.

It takes little imagination to presume an indication of the convergence of such entities in black holes. Such entities have lost all their free electric quant energy and can not interfere anymore.

The metrics of this assumption of transfer of energy to the free magnetic quant equals the values as is measured for the property "mass."

It can also be concluded that this system of exchange from free electric quant in phases to free magnetic quant with a mass manifestation and gravitation implies that the formula given by Albert Einstein of the equivalence of energy and mass, $E = mc^2$, is valid in ultimo. Only the notion of mass should not be considered for **m**, but the ultimate conversion of the quant free electrical energy into attractive free monopolar mmagnetic energy.

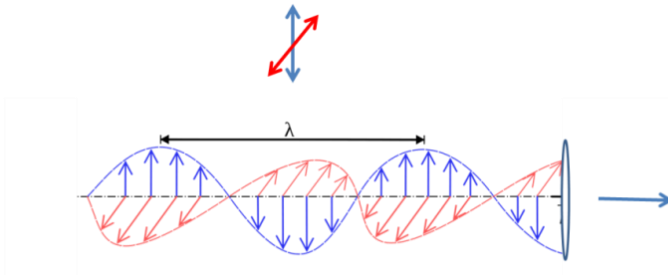
12. RECAPITULATION OF MANIFESTATIONS PER ENTITY: ACTIVE AND REACTIVE

An overview of the characteristics of the entities upon entering the newly emerged physical world.

1. As a dual operating human being, I am able to sensorial observe manifestations in physical space
2. These manifestations become observable through interferences of free electric quants between one another
3. Observing an array of successive manifestations allows man to model in hindsight an image of the behavior of the manifestations of the free electric quants in time. It is a historical reconstruction by thinking
4. The entity itself is only recognizable by its manifestations
5. The position in space of the entity is derivable by historic reconstruction of its manifestations
6. Only two types of entities show their presence in physical space: the photon and the neutrino
7. Both types of entities show an endogenous operating electromagnetic system
8. Both types of entities have at the time of restart a free electric quant
9. The free electric quant shows either the translational or the rotational mode
10. The free electric quant triggers the electromagnetic system into spatial action
11. The electromagnetic manifestations respond to the backlog in compensation of the free electric quant
12. At the time of restart of the magnetic compensation all manifestations move at the speed of light – as perceivable by the human observer

The free electric quant is 1 Planck time ahead of the electromagnetic system of the entity. Therefore, the electromagnetic system is reactive towards the free electric quant's behavior and has a sinusoidal character for both components - the electric and the magnetic - perpendicular to the direction of propagation of the entity. The sinusoidal pattern arises from the alternating over- and under-compensation by the magnetic manifestation. The photon traverses the sinusoid from **+0.3 fm to -0.3 fm**. For the neutrino, this is a cardioid type limaçon from **+0.3 fm via 0 to +0.3 fm** and twice, over a total angle of 4π . These paths are traveled within the cycle time or the period of the frequency that the electromagnetic system has at the restart, which is approximately 10^{23} **Hz**. The average speed at which the electromagnetic manifestations run is the speed of light.

To illustrate for the photon:



The two manifestations, the electromagnetic system, and the entity's propagation, are spatially active perpendicular to each other. The electrical component is active, the magnetic component is reactive to the electric component.

A similar situation exists for the neutrino. It is complicated to show its electromagnetic manifestation in a simplified graphical form. Because of its spiral character, it follows that such a graphical representation of its

manifestation is a cardioid unwinding itself in the direction of propagating the neutrino. It is virtually impossible to measure such behavior of the manifestation of the neutrino.

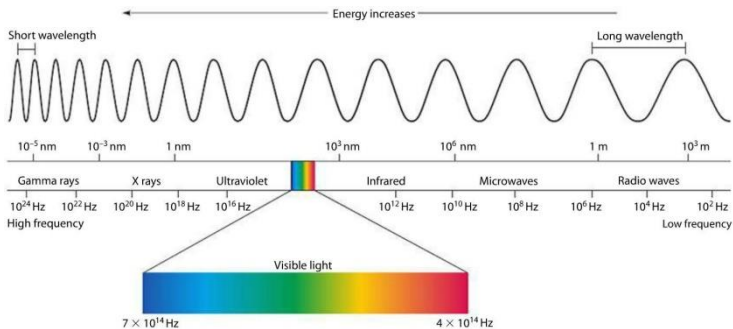
Is it even possible to measure such a manifestation in detail?

The readings should then be traceable to match with a cardioid. It is exceptionally complex, also because the neutrino hardly produces any measurable interference. The properties of a neutrino that are available through measuring are therefore still rather abstract. The magnetic chirality is measurable, and there is an indication available for a range in assumed mass manifestation.

It is incredibly complex to perform direct measurement.

For both the photon and the neutrino, it is conceivable that the frequency of approximately 10^{23} Hz of the electromagnetic system can be reduced.

This phenomenon is well known for the photon and can be found in the electromagnetic spectrum:



We observe photons within this spectrum of frequencies, meaning that a gamma photon in its path through space and time is prone to

interferences in which energy transfers to other objects. We can observe visible light that since the Big Bang has been exhausted in energy up to a frequency of approximately 10^{14} Hz. A similar phenomenon may occur with neutrinos. However, only three different frequencies for naked neutrinos are reported by mainstream science. Frequencies that can be determined from the Dutch Paradigm's postulates based on converting a part of the electrical quant to a free magnetic quant. These three versions are included in the Standard Model as the electron neutrino, the muon neutrino, and the tau neutrino. Mainstream science implicitly assumes that such a thing as an electromagnetic spectrum for neutrinos has not yet been demonstrated.

Immediately after the Big Bang, both photons and neutrinos were available naked only in the indicated gamma frequency.

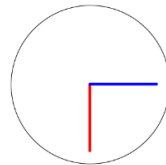
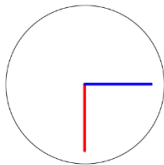
We know that photons can interfere constructively, but that is not known for neutrinos.

It will be discussed in the next chapter.

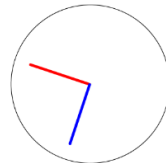
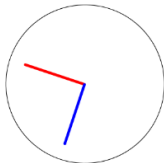
13. POSSIBILITIES FOR INTERFERENCES DIRECTLY AFTER THE BIG BANG

The Big Bang released gigantic numbers of gamma photons and gamma neutrinos. The question then arises whether such entities can interfere between one another through the electrical manifestation of their free electric quant.

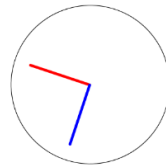
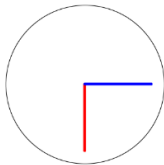
Photon/Photon



Neutrino/Neutrino



Photon/Neutrino



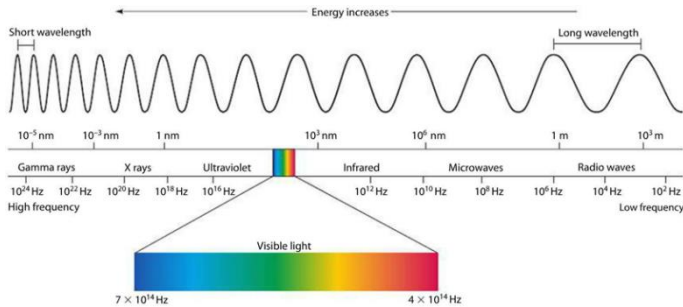
Such interference can be constructive or destructive.

In the book, *The Dutch Paradigm*, see chapter 27, Interferences, p. 91-94.

It is then evident that two identical *gamma*-photons at the starting frequency cannot interfere.

This seems to contradict our observations from which we learn that photons at lower frequencies can actually interfere constructively.

Therefore, let's review the electromagnetic spectrum,



A gamma photon emerged in physical space due to the event of the Big Bang moves with its manifestations at the speed of light. The electrical manifestation has amplitude of approximately **0.30 fm**. At first sight, constructive interference of two photons is not possible; it would lead to manifestations exceeding the speed of light. Nevertheless a possibility could be that the frequency of the combined photons would decrease by 50%, while propagation would still be at the speed of light. Such a possibility is nevertheless not a known phenomenon. There is an explanation for this, and it follows from the impossibility of a photon to convert energy from its free electrical quant to a free magnetic quant. A free magnetic quant of a photon would be bipolar and operate energetically neutral in itself. It could not absorb energy of $\mathbf{h\Delta f}$. From the logic of The Dutch Paradigm, the phenomenon of transfer of free electrical energy to a free magnetic quant can only be done if that free magnetic quant is *monopolar*. This is the case with the neutrino but not with the photon. I will not further elaborate on this issue in this place.

As stated, constructive interference of two photons requires that the electromagnetic system does not exceed the limit of the speed of light

with any of its manifestations. Lower frequencies of photons are indeed known, as we can see from the electromagnetic spectrum. At lower frequencies, constructive interference is, therefore and certainly possible. The joint amplitude of two photons under constructive interference can increase, but so can the joint wavelength.

Ultimately, the resulting manifestations of two photons in constructive interference will adjust the properties to meet the light's speed as the limit for all manifestations. This always would imply a longer wavelength than associated with the start frequency and the related lower frequency.

The question may arise how a photon can transfer energy when its frequency is reduced. This transfer is possible since a photon can exert an *impulse*, an alternative for constructive interference. Such an impulse can only be absorbed by objects that show a mass-like behavior. In effect, that impulse capability is the driving force for *accelerating* the galaxies and the related expansion of the universe.

As we know, the bandwidth of visible light is in the range of 10^{14} Hz. At this frequency, a photon can easily interfere constructively with a gamma photon in due course after the Big Bang. The lower frequency of that gamma photon must then have minimal reduction of 10^{14} Hz from the start frequency of 10^{23} Hz. In other words, the receiving photon is still active at the gamma level, but 10^{14} Hz lower than the start frequency. It affects the transfer of energy, so there are conditions that must be met to meet such constructive interference.

We must always realize that what has been stated earlier on about the way we process our visual perception, we as a dual human being, are looking for causality. We mention waves as a property for photons, but in the monistic sense there is only the interference of the free electrical quants. It is only the free electrical quant that can interfere and that we perceive through our delayed processing of perception as moving in time in a wave pattern. In graphics, this is often confused because we need a historical path to understand what movement pattern the free electrical

quant will follow and at what speed. We cannot deduce this from a single image at a given time where the entity is relative to the quant as the manifestation of the entity.

The wave is the representation of the supposed causality of the behavior of the free electrical quantity over time. It is the outcome of human causal thinking.

The speed of light is the hard limit for a displacement during 1 Planck time. The question may arise why scientists are so sure that it really is an absolute limit. I will not go into much detail on this either. The hard limit is necessary to solidify the assumption that the observed laws of nature are independent of place and time. The reference then is the speed of light as the absolute limit. It is the exact displacement per Planck period in any direction. In terms of structure you can say that all-sided during 1 Planck period an entity and its manifestations can only cover 1 Planck distance.

If we consider possible interferences between neutrinos, the same logic applies. The emerged gamma neutrinos cannot constructively interfere with their freely rotating electrical quants according to the cardioid. Nevertheless, it is conceivable that constructive interference is in principle possible if neutrinos are available at a significantly lower frequency. However, if this happens, the observable effect will be minimal in any case. It will still produce neutrinos that are difficult to detect.

It is crucial to understand that if naked neutrinos did not have the same chirality, a lot of neutrinos would be prone to destructive interferences.

We measure that neutrinos prefer left-handed chirality. The reason for the left-handed preference is most probably not important. Having the same preference prevents the annihilation of neutrinos. If a mix of left- and right-handed neutrinos was released at the Big Bang, a huge number of neutrinos would have been annihilated just at arrival in the physical world. This chirality preference looks like a coincidence and is generally

seen as a broken symmetry, but following the logic of The Dutch Paradigm, it makes sense and is even essential. We might not have many neutrinos left if this phenomenon of preference for left-handed chirality would have been absent. The preference for left-handed chirality is, according to The Dutch Paradigm, a logical and necessary consequence of the temporary interruption of the magnetic compensation.

The question remains whether a gamma photon and a gamma neutrino can interfere constructively, and the answer is yes, resulting in the creation of an electron. This will be discussed further in the next chapter of this book.

In fact, at the beginning of the physical world, when the starting frequencies are abundant, it is the only possible type of interference.

14. INTERFERENCE BETWEEN A GAMMA PHOTON AND A GAMMA NEUTRINO: THE ELECTRON

The previous chapter explained that after reactivating the electromagnetic system - although delayed by **1 Planck time** - no gamma photon/gamma photon and gamma neutrino/gamma neutrino constructive interferences were possible. At the start frequencies, both types of entities' electrical manifestations work at the speed of light. The only possibility was the constructive interference between a gamma photon and a gamma neutrino. Such interference is indeed conceivable within the absolute limit of the speed of light.

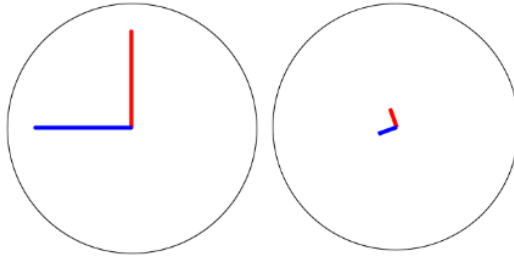
In the book *The Dutch Paradigm*, this interference is described in chapter 28, page. 94-99.

For reference herewith the quoted text: Chapter 28 page. to 97

Photon/neutrino interference: The Electron

In *The Dutch Paradigm*, the electron is a construct of a photon and a neutrino.

It is not a fundamental point particle.



The electromagnetic manifestations of the photon and the neutrino initiate through interference a spatial arrangement of the entities relative to each other.

At the restart, all these photons and neutrinos went through the same event, which resulted in

1. The same time delay: **1 Tplanck**
2. The same propagation speed: **c**
3. The same amplitude of the EM manifestations
4. The same start frequency of the EM manifestations
5. The same clock frequency for the update of values of the EM manifestations

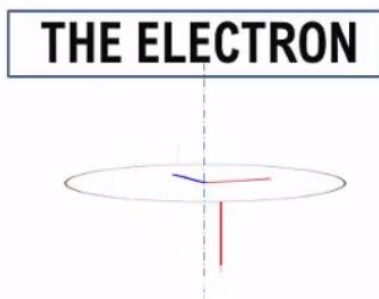
A model of the electron, as well as an animation of the sequence of interference steps to construct the electron, will be used for explanation.

Modeling in Particle Physics requires imagination. It requires that we imagine a graphic representation of entities that are themselves not sensory observable. The entities photon and neutrino lack spatial extension. They are observable only indirectly through their electromagnetic manifestations. These manifestations are not direct visible or tangible either but do have

a distinct spatial extension of phenomena. These manifestations mutually interfere, while properties rearrange.

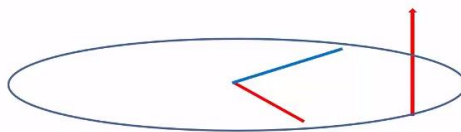
The spatial rearrangement of the manifestations under interference is specific for the construct electron. Such a spatial arrangement is ultimately observable.

The model for the electron is:



Interference with the magnetic manifestation arranges the photon in orbit around the neutrino. It has gamma frequency and travels a circle at the speed of light.

The plane of the orbit is perpendicular to the direction of propagation of the construct electron. The magnetic manifestations under interferences are graphically simplified in the animation below. The electric manifestation of the photon is in the direction of propagation of the electron as well. As a consequence of the bipolar magnetic manifestation of the photon interfering with the neutrino's monopolar cardioid manifestation, the photon's electric manifestation becomes asymmetric, monopolar as well.



<http://thedutchparadigm.org/contact/contact/>

This interference is possible due to the availability of the free electric energy of the photon. It is the “particle” identified by regular science as the photon's particle/wave behavior.

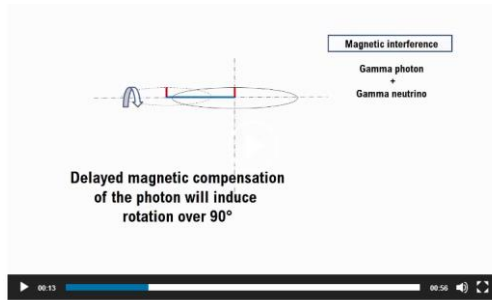
The photon animation as given in this chapter is slightly different because of the phase shift between the electric and the magnetic manifestations.

The phase shift represents the free electric energy at a value of **hf**.

*As from the start of period 3, a spatial encounter of a photon and a neutrino became consequential. Whenever such an event occurred, then the free electric energy of the quant of a photon could interfere during **1 TPlanck** with the magnetic manifestation of the neutrino.*

The result of such an encounter is the forming of the construct electron.

A simplified visualization of this sequence of events is in the following animation.



<http://thedutchparadigm.org/contact/contact/>

The occasion of the encounter of the photon's free electric energy with the cardioid magnetic manifestation of the neutrino induces a torque due to the Lorentz force. This torque rotates the photon – being the entity without a mass manifestation – relative to the neutrino. At 90° rotation, the torque is zero, and the magnetic manifestations of the photon and neutrino interfere and lock into a combined manifestation. The magnetic manifestation that compensates for the electric manifestation of the photon is in that condition asymmetric. That implies similar consequences for the electric manifestation: it becomes asymmetric as well. The photon's electric manifestation as part of the electron alternates in the direction of propagation of the newly formed construct.

Particle Physics recognizes that asymmetry of the electron as the “electric charge.”

This description includes implicit findings and hidden statements that require further explanation.

THE START OF THE INTERFERENCE GAMMA PHOTON AND GAMMA NEUTRINO

As described, the free electrical quant of the gamma photon interferes with the gamma neutrino's cardioid magnetic manifestation. Earlier on, I stated that only the free electrical quant of the entity manifests itself spatially.

This requires further explanation.

I previously mentioned that the electromagnetic system before the Big Bang worked potential and instantaneously. Under those pre-Big Bang conditions, it was impossible to indicate which of the two components, the electrical or the magnetic component was active and which was reactive. Causally, no distinction was possible according to cause and effect. The Big Bang showed through the repulsive effect on the entities that the electrical component was, in fact, the nexus of the electromagnetic system's causality. After the Big Bang, the magnetic component started the reactive compensation again, but in delay and thereby unable to compensate for the entity's electrical component in full.

Consequently, an entity's electromagnetic system was not potential anymore but spatially active in its attraction qualities to close the gap of **1 Planck time** relative to the free electric quant.

The magnetic cardioid of a neutrino being active in space will react to a perpendicular passage of the free electric quant of the photon and does so by the gamma neutrino's full magnetic manifestation.

Remember, the neutrino's free electrical quantity causes the neutrino's electromagnetic system to follow the pattern of that neutrino's free electrical quant through space and time. The photon's free electrical

quantum experiences the perpendicular passage of the cardioid as a passage through the full magnetic manifestation of the gamma neutrino - a very local and spatially limited magnetic field.

I use the term field here because it is closely related to what mainstream science is referred to as a field. Characteristic in The Dutch Paradigm is that this “field” is part of the electromagnetic system of an entity in space and time in the physical world, in this case, the neutrino at gamma frequency. During the electron formation, the gamma photon's free electric quantum experiences this gamma neutrino's magnetic field as exogenous. For the neutrino, it has an endogenous and spatially limited effect. In The Dutch Paradigm model, a magnetic field is limited and spatial assignable to an entity.

The electrical quant perpendicularly intersects the cardioid, which revolves at approximately **10²³ Hz** around the neutrino entity's center. It induces that the photon's electrical quant interferes with the full magnetic manifestation of the neutrino's electromagnetic system at gamma frequency. The interference of the electrical quant of the gamma photon in the electromagnetic system of a neutrino starts as a free electric quant/magnetic field effect. The result is the experience of the Lorentz force and the rotation as indicated.

THE PHOTON ORBITS AROUND THE NEUTRINO

This is a unique situation in which the photon's magnetic manifestations and the neutrino's magnetic manifestation exert their reactive effect on their respective electrical manifestations in space in the same plane.

Oscillation – with the reversal in chirality – induces a change in the direction of rotation. It is a characteristic feature of the neutrino. Simultaneously, the photon alternates in the direction in which the lateral

electrical attraction or repulsion occurs. In the book *The Dutch Paradigm*, I have referred to the naked photon's lateral behavior as bipolar and the neutrino as having a rotating monopolar system. In the case of the interference to an electron, the photon installs itself in orbit around the neutrino with an asymmetrical position of its electrical manifestation, as indicated in the animation. This is due to the photon's magnetical manifestation that must adjust to the limitation that only a monopolar character is possible in rotation around a center point. The electron as a construct is then formed.

The electron's electrical component's full effect is expressed spatially and is mistakenly referred to as the fundamental property "electrical charge" in the mainstream view.

RETENTION IN THE PROPAGATION SPEED OF THE ELECTRON AS A CONSTRUCT

Before the interference into the construct electron, the neutrino propagates at (almost) the speed of light. After forming the electron, the photon's electrical component's lateral displacement along the sinusoid is added to the electron's speed of propagation. Without adjustment, this affects the photon's electric manifestation's speed to periodically attain twice the speed of light - in the direction of the electron's movement. The limitation to the speed of light prohibits this, and the construct electron has to adapt accordingly to avoid the photon's electric manifestation surpassing this absolute speed. This may be done by reducing the electron's speed or reducing the electromagnetic system's frequency. A specific phenomenon arises here because we observe a combination of the two possibilities. The frequency decreases, and the electron as construct reduces substantially in speed compared to light speed.

The lower frequency in the formed electron construct is accompanied by converting Δhf energy from both constituents' free electric quants into

free magnetic quants. In the prevailing paradigm, this is referred to as the “invariant mass” of an electron. This invariant mass is reported metrically to the value **0.511 MeV/c²**. The energetic content is thereby **0.511 MeV**. This means that each of the two subject entities' free electrical quant is reduced with Δhf of **0.255 MeV**. A decrease in the frequency means a larger wavelength, which translates via the circulation of the photon's standing wave to spatial inflation of the construct electron's disc form. The non-spatially expanded entities have thereby become spatially observable into the construct electron. However, this spatial extension is still tiny. It is very hard to measure. The metric value for the size of an electron is therefore not known within reasonable accuracy.

The lower frequency in the formed electron construct is accompanied by converting Δhf energy from both constituents' free electric quants into free magnetic quants. In the prevailing paradigm, this is referred to as the “invariant mass” of an electron and is reported metrically at the value **0.511 MeV/c²**. The energetic content is then **0.511 MeV**. This means that each of the two subject entities' free electrical quant is reduced with Δhf of **0.255 MeV**. A decrease in the frequency means a larger wavelength, which translates via the circulation of the photon's standing wave to spatial inflation of the disc form of the construct electron. The non-spatially expanded entities have thereby become spatially observable into the construct electron by their manifestations.

I will eventually use the dimensions of the proton to calculate the size of the electron. The proton's metrics have a reasonable accuracy, and we can recalculate the frequency of the electromagnetic systems within the electron based on The Dutch Paradigm modeling of the proton. However, it can already be concluded that the most considerable contribution to the reduction in speed of the electron is made by the reduction of the speed in the direction of displacement to well below the speed of light.

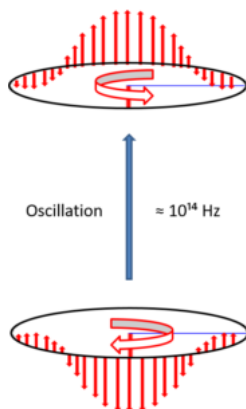
ELECTRON OSCILLATION DUE TO DIFFERENCES IN FREQUENCY OF THE CONSTITUENT'S GAMMA PHOTON AND GAMMA NEUTRINO IN THE CONSTRUCT ELECTRON

At the restart of the magnetic compensation after the Big Bang, the neutrino's gamma frequency is reduced by approximately 10^{14} Hz to keep the free electrical quant of the neutrino at the limit of light speed. The naked neutrino also remains in left-handed chirality. Interference of the neutrino's electrical quant with an exogenous magnetic influence can temporarily bridge the gap of 10^{14} Hz and bring the neutrino into right-handed chirality. Such a passage can be incidental but also structural, which is the case in the construct electron. With the gamma photon at the starting frequency, the photon's magnetic compensation will bridge the "deficit" in the neutrino's magnetic compensation in the electron every 10^{14} revolutions. Therefore, the neutrino will start to oscillate at the frequency of 10^{14} Hz from left-handed to right-handed chirality and vice versa. This is in regular science identified as the positron.

THE POSITRON IS AN ELECTRON IN THE OPPOSITE DIRECTION OF ROTATION

The electron oscillates with a frequency of approximately 10^{14} Hz. Due to the oscillation, the chirality of the neutrino changes and thus causes a reversal of the asymmetry of the electrical component of the photon system, as indicated below. The result is an electron that is mistakenly referred to by current science as the electron's anti-particle. It is regularly called the positron.

In illustration:



This figure shows how the oscillation of a naked electron occurs if there are no other objects nearby that shows the same phenomenon of the asymmetric electrical manifestation.

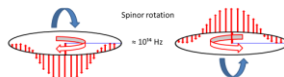
The asymmetric electrical manifestation is anisotropic, directional for both the electron and the positron.

THE SPINOR FUNCTIONALITY

An electron in orbit around the nucleus of an atom *shows* isotropic behavior. The electrons are in orbit in pairs of two electrons, where they have opposite spin, referred to as $\frac{1}{2}$ **spin, up and down** $\frac{1}{2}$ **spin**. Spin is referred to as a quantum number. Spin is not specific the characteristic of chirality, and though its origin is magnetic, it cannot be physically defined. Concerning an electron's properties, also the term spinor is indicated, related to the Dirac equation.

According to The Dutch Paradigm, the asymmetric manifestation of an electron and positron in the naked condition is, in fact, anisotropic and oscillating. However, an additional rotation will occur at the oscillation if an object is nearby with an asymmetric electrical manifestation. This rotation causes the electron's asymmetric manifestations and the nearby object to a reorientation towards the position of mutual attracting. This is shown below as an example, shown here for a bipolar magnetic situation. In the atom, the proton's electrical manifestation will act as the initiator to bring the electron in the additional rotation towards installing the mutual attraction mode.

This is the *spinor* rotation.



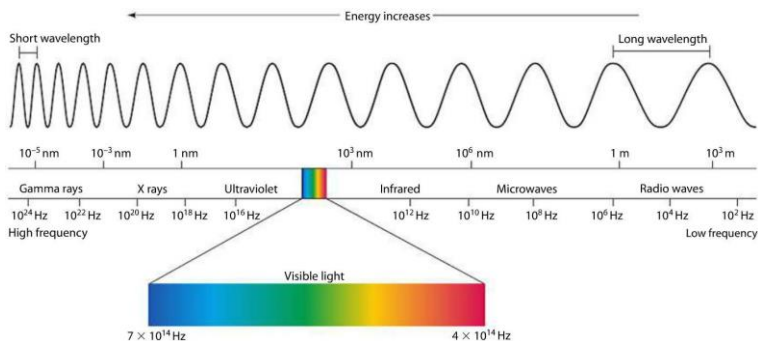
The riddle of what the nature of spinor functionality is hereby clarified. What emerges is the consequence of the anisotropy of the photon's electrical asymmetric manifestation in the electron. It exhibits quasi-isotropic behavior due to the relatively high-frequent spinor rotation. It emulates a quasi-isotropic behavior of the electron by periodic changing at **10¹⁴ Hz** in $\frac{1}{2}$ **spin** orientation, up and down.

If we could illuminate with a stroboscope at **10¹⁴ Hz** an electron while it orbits around a nucleus, the aforementioned spinor effect would be made

observable. The rotation would visually stop or, with some variation, slowly turn counterclockwise and counterclockwise.

It is remarkable, to say the least, that we have such a very fast stroboscope available, namely through the exposure of the electron with visible light.

It can hardly be a coincidence that this spinor frequency, which results from the amount of free magnetic quant of a neutrino, corresponds energetically with the visible light frequencies.



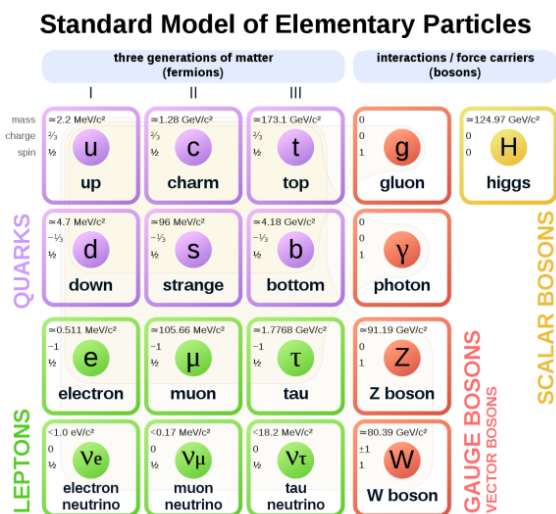
This is not further elaborated here. As discussed, I assume that the spinor functionality is the basis on which The Dutch Paradigm model can explain optics' classical physical laws.

The spinor functionality is probably mathematically difficult to describe. It is doable in the case of an electron spinning around a nucleus. A spatially stochastic influence with two or more separate electrons will make the mathematical description quite an ambitious task. The spinor rotation is conditional. Using a model constructed by thinking makes the representation of the spinor functionality transparent and easy to understand.

The electron will prove to be the building block from which the further build-up to objects will follow.

15. THE ELECTRON'S SECRETS REVEALED

In the prevailing paradigm, the electron is indicated as an elementary particle without spatial extension. It is declared in the Standard Model of Elementary Particles.



The electron acts in this model as a “black box.” It exhibits exogenous properties referred to as electric charge, mass, spin, and the electron shows some surprising behavior towards its environment. Experimental research has provided extensive insight into the behavior of the electron.

But why is the electron assumed to be an elementary particle?

This is due to an arbitrary decision.

At the beginning of the last century, it was concluded that the observed properties were incompatible with spatial extension of the electron. At the time and for that reason, the electron was declared to be an elementary point particle. Decades later, another two additional “electron” type elementary point particles - muon and tau – were discovered and are listed in the Standard Model.

The Dutch Paradigm models the electron as a spatial construct constituted with a gamma-photon and a gamma-neutrino. The problem of Henri Poincaré’s repelling forces by a dispersed electric charge within an electron with a spatial volume does not exist in this model. The model of The Dutch Paradigm solves the issue of the electrical charge satisfactorily. The electric “charge” in the model is anisotropic and becomes quasi-isotropic due to the spinor functionality. The functionality of “electric charge” is thereby now well understood and does indeed allow spatial expansion. Therefore, the issue of repelling forces within the electron (Poincaré) is no longer a problem. There is no reason anymore to assume that the electron has to be a point particle.

With this electron model of The Dutch Paradigm, we can interpret the root cause of the behavior of the electron. The observed phenomena can be causally explained from the gamma-photon's interference and gamma-neutrino as the electron's constituent entities.

In chapter 30 of the book *The Dutch Paradigm*, an extensive summary is given for understanding the electromagnetic systems' functional phenomena within the construct electron:

There is more than a remarkable difference between the assumption that the electron is a point particle with no internal structure and the suggested construct with an amazingly active constituents' internal structure.

To highlight as per The Dutch Paradigm:

1. There is an orthogonal three-dimensional system available for spatial information
2. There is rotational information available, both left-handed and right-handed
3. There is a gyroscopic effect of stabilizing the particle in space
4. There is a frequency differentiation between the neutrino and the photon constituent of the electron
5. There is the potential to exercise Lorentz and Coulomb forces
6. These forces do have spatial information in direction and rotation
7. There is a residual monopole magnetic capability to interfere with external particles/constructs
8. The construct electron can absorb and release frequency derived energy

This list is not conclusive. With the model of an electron as an elementary point particle, these characteristics of an electron are hidden in the black box and, therefore, unavailable for a deep understanding of electron behavior.

The Dutch Paradigm explains that the electron is the basic construct to build all observable objects in space. The specific properties to model the proton and neutron can be derived from the electron as the sole and only building block.

The additional explanations follow what is published in the book The Dutch Paradigm. The electron model gives rise to more in-depth insight and research into phenomena not yet noticed or understood within the prevailing paradigm.

In this respect, The Dutch Paradigm is a starting point and stimulus for further research.

Some further explanation to the list as stated above:

1. There is an orthogonal three-dimensional system applicable for spatial information

The configuration in the electron of the entities' photon and neutrino manifestations is recognizable in orderly patterns. The manifestations can be represented with familiar basic mathematical and geometrical equations. The observer can study - in thought – within the coordinate system for causality and has a spatial reference. This is alike as with the electromagnetic systems of a naked photon and a naked neutrino.

2. There is rotational information available, both left-handed and right-handed

This allows recognizing patterns in the dynamics. The cardioid and the spinor are not abstract quantum numbers but phenomena that can be imagined in geometrically dynamics in space and time. The properties are anisotropic and become quasi-isotropic due to the high-frequency in processing the oscillation and the electron's spinor action.

3. There is a gyroscopic effect to stabilize the particle in space

This effect emerges when the photon is in rotation in an orbit around the entity neutrino. Because the electron will show inertia, this property has an active stabilizing effect. This concept of “mass” inertia will be explained in the last chapter of this book according to causality.

4. There is a frequency differentiation between the neutrino and the photon constituent of the electron

The naked neutrino is known to oscillate in chirality by incident. In the construct electron, this oscillation behavior becomes institutional, and the spinor unwinding creates quasi-isotropic behavior of the asymmetrical electrical manifestation.

5. There is the potential to exercise Lorentz and Coulomb forces

The Lorentz force will be further explained later in this book into its likely phenomenological origin.

6. These forces do have spatial information in direction and rotation

This can also be easily referred to in the orthogonal coordinate system.

7. There is a residual monopolar magnetic capability to interfere with external particles/constructs

This is reported as an observation.

8. The construct electron can absorb and release frequency derived energy

This is also an observation, without specifying under what circumstances this exchange of energy can take place. It is already clear that the gamma photo and gamma neutrino in the electron can adapt in frequency at different speeds. The concept of kinetic resting speed will be introduced and explained.

Additional remarks regarding characteristic properties and phenomena can be mentioned:

9. Difference in characteristic behavior of the free electric and free magnetic quant

The orientation of the photons' free electric quant is different from that of the free magnetic quant. The free magnetic quant arose from a transfer of free electrical energy into free magnetic energy. This transfer corresponds metrically to the energetic value of what is commonly referred to as "mass." The free magnetic quant, the "mass," is then equally composed of a rotating orientation from the neutrino and a translational orientation from the photon's contribution.

The electric manifestation of the electron is directed to the outward space

The magnetic manifestation of the electron is directed inward to the electron's geometrical center, being the entity of the neutrino

The magnetic manifestations' orientation is always in attraction to the electron's center, irrespective of the spinor unwinding or oscillation of the electron. It is independent of the electron being in left- or right-

handed chirality mode. The observable effects of the free magnetic quant provide the exogenous observable attractional effect to that center. The directionality can be referred to as monopolar in character. The electrical manifestation will spatially turn 180° during oscillation and will alternately display an attractive and repellent character in the same direction. The resulting operation can be referred to as having a quasi-bipolar character.

10. The free magnetic quant of an electron has a translational and rotational active part

From the above considerations, it can be seen that the free magnetic quant of the electron always has an attractional effect and consists of a lateral and a rotating component. Both are directed to the center of the electron, the place from which the neutrino entity manifests itself. The rotating part changes periodically at 10^{14} Hz in the direction of rotation.

This phenomenon is what is known as gravitational attraction.

A phenomenological consequence is that gravity's attractional force is not strictly linear but probably works according to a sinusoid with minuscule amplitude. This can be verified when accurate values are known for the various electromagnetic systems' frequencies.

11. Possible significance of the preferred position for left-handed chirality

Apparently, the naked neutrino has an endogenous energetic preference for left-handed chirality. In the case of an externally forced oscillation to right-handed chirality, it will endogenously fall back to the preferred position of left-handed chirality. This

preference results in a slight change in frequency, a redistribution of internal accumulated energy. A frequency oscillation will then have to occur within the neutrino's electromagnetic system, possibly due to some form of interference with the environment. In the electron, this preference for the left-handed chirality still exists, though the oscillation suppresses it. It will play an important role in understanding the proton bond's behavior in the proton, as elucidated in the chapter on β -decay of the neutron.

12. Electrons can mutually interfere into higher compositions, initiated from the free electrical quant of the gamma photon in the electron

The consequence of the above finding is that as and when the free electrical quant of an electron passes through another electron's magnetic field, the Lorentz force will become active. It will play a major role in the initiation and maintenance of the dodecahedron's structural integrity. This will be discussed in a subsequent chapter.

13. Pauli Exclusion principle and the relationship between the oscillation of the electron and the interference with photons in the visible part of the electromagnetic spectrum

These phenomena will be discussed in brief in this book in accordance with the likely causal backgrounds.

16. POTENTIAL OTHER INTERFERENCES AFTER THE BEGINNING OF THE PHYSICAL UNIVERSE

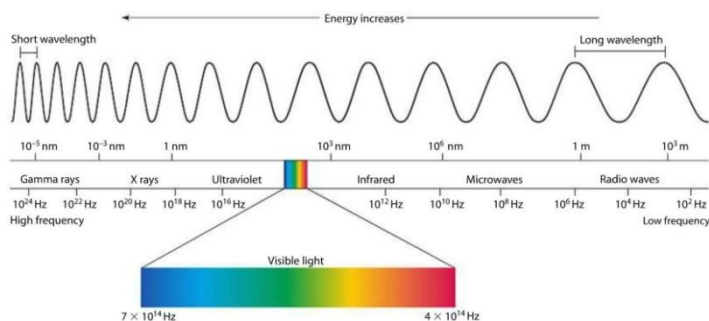
The presumed beginning of the sequence of events caused by the singularity conditions' disturbance prior to the Big Bang has been described. Two types of entities were released into the emerged physical universe, the gamma-photon and the gamma-neutrino. Each entity from then on indirectly shows its presence in the physical universe through the manifestation of its free electrical quant. Both types of entities show the described electromagnetic system's manifestations at initially identical starting frequency. Characteristic is the sinusoidal nature of the electromagnetic manifestations in time, to effect compensation for the escaped free electrical quantum - in vain.

The speed of the quant and the entity itself is the speed of light. The speed of light is the absolute upper limit for the speed of propagation in physical space.

At the beginning of the creation of the physical universe, the structure is still a relatively straightforward and filled with only the manifestations of the free electrical quants of the naked entities photon and neutrino. The photons - and the neutrinos - enter the universe absolutely synchronized and have, among other things, the same starting frequency.

Constructive interference of entities at the start frequency would breach with the manifestations the speed of light.

Yet in our environment we perceive photons in a range of frequencies as defined in the electromagnetic spectrum.



It is known that photons at lower frequencies can indeed interfere constructively under the condition that the combined amplitude at the constituent photons' frequency does not breach the limit of the speed of light.

Since these low frequencies are known, the naked photon must be able to transfer energy to its environment. De Broglie has researched this and demonstrated it experimentally. We also know this phenomenon as the solar wind.

In the equation drawn up by De Broglie, it is indicated that a photon can also transfer energy through an impulse through interference, without showing a "mass" manifestation.

De Broglie's equation shows the relationship between wavelength and the momentum of a mass-bearing or non-mass particle:

$$\lambda = \frac{h}{p} = \frac{h}{mv}$$

- λ the wavelength of a particle
- h the Planck constant
- p the impulse of the particle
- m the invariant mass of the particle
- v the velocity of the particle

The terms are defined in the prevailing paradigm. It is considered to represent the power of a photon that can transfer energy to other entities through interference, while simultaneously reducing the energy of the free electrical quant. So this is an exogenous transfer of energy.

It implies that a photon as a naked entity can eventually have a lower frequency than the start frequency. A gamma photon must obtain a lower frequency through interference in order for the free electric quant to ultimately enable sensory perception. After all, as humans we can only perceive light in the visible part of the spectrum.

Even when this reduction of frequency in the photon would have been a transfer of free electric quant to free magnetic quant, than such a free magnetic quant cannot result in showing gravitational attraction in the naked photon's status. As previously discussed in the chapter on "Possibilities for interferences directly after the Big Bang":

There is an explanation for this, and it follows from the impossibility of a photon to convert energy from its free electrical quant to a free magnetic quant. A free magnetic quant of a photon would be bipolar and operate energetically neutral in itself. It could not absorb the energy of Δhf . From the logic of The Dutch Paradigm, the transfer of free electrical energy to a free magnetic quant can only be done if that free magnetic quant is monopolar. This is the case with the neutrino but not with the photon itself.

This is, in essence, what De Broglie found. Translated to The Dutch Paradigm: a naked photon cannot convert energy into a free magnetic quant and therefore cannot convert this energy into a "mass" manifestation.

Therefore, the only way a naked photon can transfer energy Δhf and decrease its frequency with Δf is by transferring energy to another entity or an electron. It is by an exogenous transfer of energy

The effect of the creation of gravity due to the interference of a photon can only be attributed to the enforced *monopolarity* of the magnetic manifestation in the magnetic field of the neutrino, as is the case in the construct electron.

This other entity for interference with the free electric quant might be the photon as a component of an electron as well. It is known physically in the form of heat absorption and radiation and the visibility of objects.

When a naked photon with a frequency in the range of **10¹⁴ Hz** is available, an interference with an electron in the human eye will allow sensory perception.

After interfering with an object, a trapped photon will, upon oscillation of the relevant electron of an object, detach from that electron's gamma-photon and resume its journey in space, again as a naked photon. After all, a free magnetic quant in a naked photon in space will again manifest itself as quasi-bipolar. It will then again show the alternating direction of gravity, resulting in a zero-sum exogenous pull. The same is true for the free electrical quant of a photon. It results in a zero-sum exogenous Coulomb attraction.

Due to this behavior, such a photon can reflect the momentary encounter with an electron of an object in the human eye. It then undergoes a similar interference with an electron in the human eye. It becomes a razor-sharp reflection of the photon's previous encounter with an electron from the visited object.

As stated, when the physical universe was formed, photons with frequencies below the starting gamma level are not yet available. Thus, in order to transfer energy, the photons must have many encounters and interferences with energy transfer via an impulse to lower the frequency of the free electrical quant from **10²³ Hz to 10¹⁴ Hz**.

This means that the objects in the universe first had to be accelerated considerably by photons' energy transfer from the

gamma frequency before photons became available to enable sensory perception.







Probably this is the cause of what is referred to as dark energy. The riddle of the expanding universe?

How about the neutrino?

A similar spectrum of frequencies for neutrinos has not been observed.

Such a spectrum is conceivable, provided that the neutrino can transfer energy of the rotating free electric quant to other entities or objects. As observed so far, this is – according to The Dutch Paradigm - only possible with specific forms of interference of the neutrino as being a constituent partner in electrons.

Neutrinos with different mass manifestations are known in the Standard Model. The name refers to the muon and the tau types of electrons. The latter particles have a life of less than 10^{-6} sec. The muon neutrino and tau neutrino have similar (electron) neutrino characteristics but differ in “mass” manifestation.

$=0.511 \text{ MeV}/c^2$ -1 $1/2$  electron	$=105.66 \text{ MeV}/c^2$ -1 $1/2$  muon	$=1.7768 \text{ GeV}/c^2$ -1 $1/2$  tau
$<1.0 \text{ eV}/c^2$ 0 $1/2$  electron neutrino	$<0.17 \text{ MeV}/c^2$ 0 $1/2$  muon neutrino	$<18.2 \text{ MeV}/c^2$ 0 $1/2$  tau neutrino

Based on The Dutch Paradigm, both types of neutrinos, the muon- and the tau-neutrino, have apparently converted energy through interference from their free electrical quant into a free magnetic quant. The different neutrinos as shown in the Standard Model can be released during nuclear

decay processes. The corresponding frequencies can be calculated from the decay processes in which the muon and tau neutrino are released.

Indeed, decay enables constructs to release neutrinos that have undergone a transfer of energy to the free magnetic quant (a "greater mass"). According to The Dutch Paradigm, they still belong to the same type of entity, the neutrino. The difference is the reduction in the free electric quant frequency and its free electric energy. As naked neutrinos, they will continue to exhibit an increased "mass" manifestation, or in terms of The Dutch Paradigm, an increase in the free magnetic quant. This, in turn is endogenous energy transfer.

However, we cannot yet measure the frequency of a neutrino.

A specific circumstance is that the neutrinos show left-handed chirality when naked. Because of that phenomenon, left-handed chirality may only be mutually eligible for constructive interference. Two participating neutrinos then have the requirement that together they may not contain more energy in their combined free electrical quant than a single neutrino had in the starting position at the start gamma frequency. This is to prevent exceeding the speed of light. None of the three known types of neutrinos meets this requirement. Therefore, it is concluded that constructive interference from naked neutrinos is unlikely, especially at the beginning of the universe. Apparently, neutrinos can only take up other frequencies in a composite context and that is easily explained from The Dutch Paradigm.

The next question is:

Can electrons interfere with gamma photons, gamma neutrinos, and electrons in the universe's beginning phase?

This question cannot be answered directly from the situation of naked electrons. If a single electron were to pick up a second gamma photon, the electron system's frequency must find a new balance between the propagation speed and frequency of the participating photons and the gamma neutrino. It is a similar argument, as noted above, for two left-

handed neutrinos under constructive interference. Phenomenologically this is possible, but if it happens, I suspect such an electron to have a short lifespan. It will quickly decay.

If a photon has a much lower frequency, then this constructive interference is possible for a more extended period. It causes only a minimal reduction in the electron's frequency. A low-frequency photon can constructively interfere with the electron's gamma photon, again provided that the combination of the two-photon quanta does not exceed the limit of the speed of light.

When such interference from a gamma photon of an electron and a photon occurs in the low-frequency visible light bandwidth, there is a concise interference life.

If such a photon interferes with the gamma photon, the electron oscillation will cause an immediate exit. As stated, this almost instantaneous entry and exit will result in minimal optical distortion. This process of short or relatively short interference from low-frequency photons and electrons is not limited to photons in the visible region of the spectrum. However, photons at other frequencies will give a less sharp or unclear image of an object in reflection. Photons with just the right frequency can provide a razor-sharp reflection of the previously visited object.

Photons with a frequency low enough to interfere are not yet available at the early stage of the universe.

Indeed, free gamma photons can experience a reduction in their amount of free electrical energy due to the transfer of energy to an object through an impulse, according to De Broglie, as discussed earlier in this chapter. Such an object will accelerate due to the interference and build up kinetic energy. Destructive interference between gamma photons and electrons is also known. Such electron/positron annihilation can be forced in an electron/positron collider. The colliding electrons then decay into their

constituent gamma photons and gamma neutrinos. This is experimentally proven in the LEP, the Large Electron-Positron collider.

The possibility remains that electrons can interfere with each other. This is certainly conceivable and even obvious.

This will be explained in the next chapter.

17. DISORDER TRANSFORMS INTO A COMPLEX FORM OF PERFECTION

We have argued that in the pre-Big Bang situation, there were an infinite number of entities in a singularity in a perfect equilibrium of their individual potential causality. This situation was modified during 1 Planck time, and entities emerged into space with their free electric quant with energy content of hf and their manifestations moving at the light's speed. Gamma photons and gamma neutrinos became identifiable and could potentially interfere with other entities. These interferences are possible due to the presence of the free electric quants in the physical space

Mutual interference of the electrical quant of a gamma photon with a gamma neutrino's magnetic endogenous field creates the electron. It is the first stable construct of two entities. It results from a coincidental, stochastic spatial incident of a gamma photon and a gamma neutrino. It can be seen as the first occurrence of disorder through encounters of two separate entities' manifestations. The subsequent grouping into the construct electron with its impressive properties is for the human thinking causally unambiguous.

The constituent entities had no distinct spatial dimensions, but their combined electromagnetic manifestations into the electron show spatial and eventually observable properties and metric dimensions.

Obviously, this description is a simplification of events that we can hardly comprehend. Still, we can attempt to understand the principles of what happened at that time.

The Dutch Paradigm describes this conceivable outcome through modeling.

It could well be the outcome of processes that have been initiated by chance but are completed in structural interferences, resulting in time stable complex constructs.

This model exhibits properties covering the known and objectified physical, sensory perceptions attributed to the electron.

The next step in the thinking process is aimed at modeling spatial composites of two or more constructs. The Dutch Paradigm's starting point was that the more complex constructs could be described as composites of electrons, photons, and neutrinos.

In the physical space, combinations of constructs are apparently formed by coincidence in interferences, but the outcome is predetermined.

The gamma photon's free electric quant is still active in the electron, albeit at a slightly lower frequency. This free electric quant can thus constructively and randomly cause new interferences.

The question then arises: how does an electron/electron interference proceed, and what will be the outcome?

Before answering this question, we know that the electron formation requires a necessary and eventually significant reduction in the construct's propagation speed. The reference for this reduction is the necessity to avoid breaching the speed of light by the free electric manifestation of the electron's gamma photon. The direction of propagation of the entities and also the electrons is radial out of the center of the singularity from which they originated. Such a reduction in speed of propagation will introduce a radial spatial separation. The electrons will spatially lag.

It is all extremely dynamic because there are more local processes at play that exert their influence. The entities in an electron during formation have induced tremendous spatial inflation in displaying their electromagnetic manifestations. This spatial extension is enforced onto the surroundings and causes new interferences with other electrons, photons, and neutrinos. An extremely complex dynamic spatial initiative emerged, causing new stochastic interferences with free electric quanta of surrounding entities. Electrons can have a propagation speed at a lower but almost the speed of light, as will be explained in the chapters on inertia and kinetic rest speed. Therefore, there will be a sequence of events with the outcome that the electron will slow down.

The spatial volume of the universe in which all these events happen can hardly be expressed in terms of dimensions. In contrast, we can indicate the scale on which the dynamic events of an electron occur. In comparison with the universe's dimensions, we see a minimal metric value of the electron's amplitude, approximately $0.3 \cdot 10^{-15}$ m. But the events in the electron are on a massive scale if we compare this amplitude with the Planck length of $1.61 \cdot 10^{-35}$ m. Also, the frequency of the electromagnetic systems of the electron is **approximately 10^{23} Hz**, which is extremely low compared to the Planck time of $5.391 \cdot 10^{-44}$ sec. All metrics are present in the electron in an extraordinarily extreme variety. In this metric, the frequency at which the electron's spinor functionality occurs can even be assessed as extraordinarily slow, “merely” 10^{14} Hz.

The question then remains: what happens whenever a free electric quantum of the photon in an electron traverses the rotating magnetic field of the neutrino plane of another electron?

Despite the modest size of the events, it may be concluded that the Lorentz force again plays an important role in such a subsequent interference. This Lorentz force causes the interfering electrons to tumble. All the electrons are prone to such tumbling. They tumble in chaos around each other until a new stable construct can form.

The Dutch Paradigm postulates that in this melee of tumbling electrons, dodecahedrons are formed of 12 electrons. These dodecahedrons form the proton and the neutron in pairs in a subsequent interference.

In the book *The Dutch Paradigm*, this is indicated as follows (chapter 32, page 108):

Interference of electrons, forming of dodecahedrons

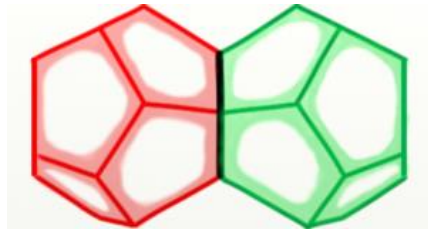
Electrons are in massive numbers present in the universe. Those electrons can interfere with other particles and constructs.

The types of forces available to impact the electron:

1. The Coulomb force
2. The gravitational force
3. The Lorentz force

The Dutch Paradigm postulates that electrons are the constituents to construct the protons and neutrons.

The electrons arrange into a twin dodecahedron structure.



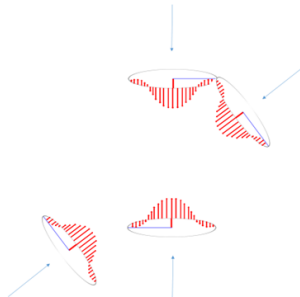
In *The Dutch Paradigm*, the electron is central to constructing all observable objects in the universe. The only participating entities are the photon and the neutrino, either as free entities or embedded in the construct electron.

Subsequently, the construct dodecahedron emerges into being in massive numbers in this melee of tumbling electrons.

In the book *The Dutch Paradigm*, this is stated as follows (chapter 33.):

In the very early stage of development of the universe, these electrons were formed in abundance amid an overwhelming mix of other electrons, gamma photons, and neutrinos as well. It is difficult to visualize how new constructs could emerge out of such a seemingly wild and complex mixture of particles.

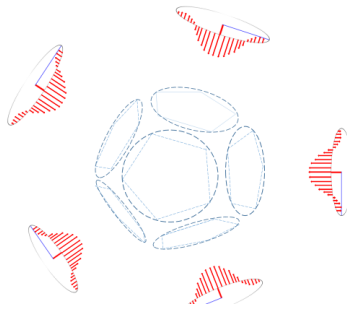
Nevertheless, this is possible. Electrons may collide at an angle. If so, that adds the activity of the Lorentz force to the Coulomb force,



The asymmetrical free electric manifestation meets the magnetic manifestation of another electron, and consequently, they become mutually subjected to the Lorentz force. This Lorentz force introduces a spatial and random movement of such a couple of electrons.

The Dutch Paradigm postulates that out of the mix of particles, electrons' random spatial configurations emerge in a dodecahedron arrangement.

In an illustration:



12 electrons might accidentally collide in a dodecahedron's spatial arrangement, with an electron on each face. Once such an arrangement is there, each electron will exert Lorentz forces with neighboring electrons. The vectors of these forces are all pointing inwards to the opposite electron.

The formation of dodecahedrons in a wildly tumbling environment of huge numbers of electrons seems unlikely at first sight.

It is hard to imagine that such splendid complexity can emerge out of such chaos. Still, this is apparently what happened and can be understood as a statistically plausible outcome

The minimum necessary conditions must be understood to facilitate building the dodecahedron. To make this plausible, a deep understanding of the dynamical properties of the electron is necessary.

This deeper understanding needs further refinement, and in The Dutch Paradigm, this formation of dodecahedrons is provisionally declared as a postulate. In principle, this postulate is verifiable.

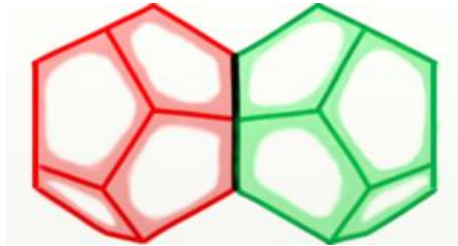
A subsequent chapter further explores why this postulate can be regarded as a plausible consequence of earlier postulates.

18. THE FORMATION AND STABILITY OF THE CONSTRUCT DODECAHEDRON

The previous chapter quoted from the book *The Dutch Paradigm*:

The Dutch Paradigm postulates that electrons are the constituents to construct the protons and neutrons.

The electrons arrange into a twin dodecahedron structure.

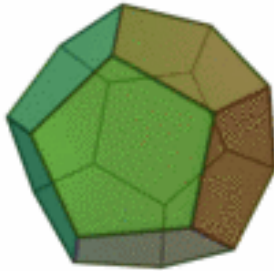


Shown here is the model of two dodecahedrons bond together to form the proton. The proton is the nucleus of a hydrogen atom. There is an electron on each of the outer faces of the dodecahedrons. Only on the binding plane is a special situation that will be discussed in a subsequent chapter.

The proton is an extremely stable construct. The half-life time is at least **$1,67 \cdot 10^{34}$ years**. Despite all efforts, the decay of a proton is not yet understood from experiments. The Large Hadron Collider is supposed to teach us more about such decay, but the proton comes back into being as quickly as it is shot into pieces. A theory has been devised for this -

confinement - but that is more of an idea than a theory based on a first principle.

What is true for two dodecahedrons also applies to a single dodecahedron as well.

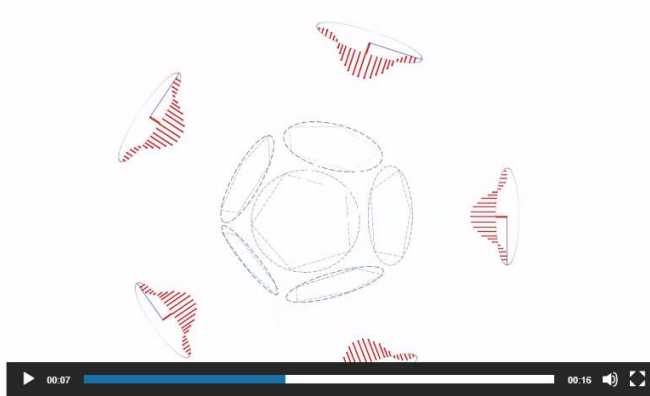


An electron is active at each of the facets that form the outer surface of the dodecahedron. The asymmetric electrical manifestation of each electron counter-rotating traverses each of the five adjacent electrons' rotating fields. As long as these electrons are in the same phase of the oscillation, then this is an extremely stable construction due to the prevailing Coulomb and the induced Lorentz force. In combination, this binding force is recognized by The Dutch Paradigm as what is known as the strong nuclear force. The prevailing paradigm postulates that the strong nuclear force action is exerted by a boson called the gluon. As per

The Dutch Paradigm, the dodecahedron model suggests that the strong nuclear force is the result of the Lorentz and Coulomb forces.

A dodecahedron composed is of 12 electrons exhibiting oscillation on all planes in the electromagnetic spectrum's visible region. The oscillation

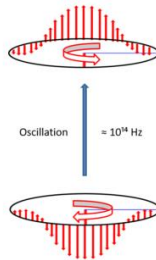
requires precise synchronization of all 12 participating electrons to preserve the same state to secure the dodecahedron's stability.



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This is a necessary condition, and the question arises whether this condition can be met. To assess this, we have to transfer our thinking to the time-sequential settlement of events. The oscillation occurs at a frequency of approximately 10^{14} Hz, in an environment of photons and neutrinos at gamma frequencies of 10^{23} Hz. The oscillation phenomenon is extremely slow relative to the gamma frequencies. There is, therefore, a relatively long period, in other words there are many Planck times available for the electrons to get into a state of synchronization of oscillation that will allow the formation of a dodecahedron.

Nevertheless, all 12 electrons can't have gone through the same historical events. Therefore, it is highly unlikely that the participating electrons will be synchronized in oscillation when entering the dodecahedron formation.



This history is directly related to the number of spatial chaotic interferences each of the 12 has experienced with other electrons' free electric quants tumbling through space. Every interference leaves its energetic traces in the participating electrons. The traces are small but still produce significant variations in the electron's metric values.

The question arises whether all 12 electrons with a different and coincidental history of interferences with free electric quants in a dodecahedron will adopt the necessary simultaneous oscillation.

The answer to that question is yes, the construction of the dodecahedron provides that condition.

Because the difference between the gamma frequencies and the frequency of oscillation is massive, many interferences at gamma frequency will become available within a formed dodecahedron to balance electrons' energetic differences.

The 12 participating electrons come in the appropriate equal phase of mutual attraction by Coulomb forces and lock themselves into the dodecahedron. The electrons are anchored in position by the Lorentz force subsequently and permanently dynamically generated by ongoing interference. So, after the dodecahedron has been formed, the history of

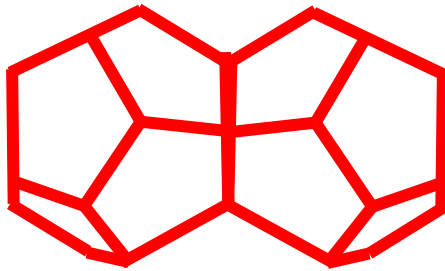
differences in oscillation frequencies is equalized by the mutual interference forcibly. The dodecahedron's spatial structure is robustly secured by the Coulomb and Lorentz forces and extremely fault-tolerant to disturbances caused by the environment. The dodecahedron structure cannot be broken as long as the oscillations are synchronous. And this synchronization is permanently secured by the fivefold form-forced interference with a frequency of 10^{23} Hz from every electron on every plane.

The determining metric data to the dimensions of the dodecahedron are available as soon as a recalculation can be derived from the proton's dimensions. In the next chapter, the dodecahedron model's properties with an electron on each of the 12 faces will be discussed.

The process of oscillating and equalizing can be programmed to allow for a computer simulation. In The Dutch Paradigm context, such a simulation is not yet available, and I limit myself to indicating the construction principles and dynamic workings. For this reason, I still refer to a postulate for the formation of the dodecahedrons but give this additional plausible explanation as to the likelihood of how the dodecahedrons emerged. It is expected that in due time the postulate can be converted from plausible into a causal relationship.

19. THE TWIN DODECAHEDRON STRUCTURE

The Dutch Paradigm proclaims that the proton and the neutron are composed of two dodecahedrons.



A specific electron configuration is established at the binding plane, which deviates from those at the other facets on the two dodecahedrons' outer shell.

In the book *The Dutch Paradigm*, this phenomenon is discussed in chapter 35, p. 121-122.

This is further explained below, which is partially quoted text from chapter 35.

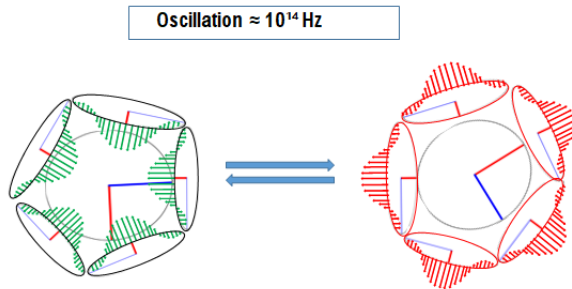
Twin-dodecahedrons

When two dodecahedrons collide, they form a pair.

All 12 electrons of a single dodecahedron are oscillating in sync. The mode of oscillation relates to the actual status of the

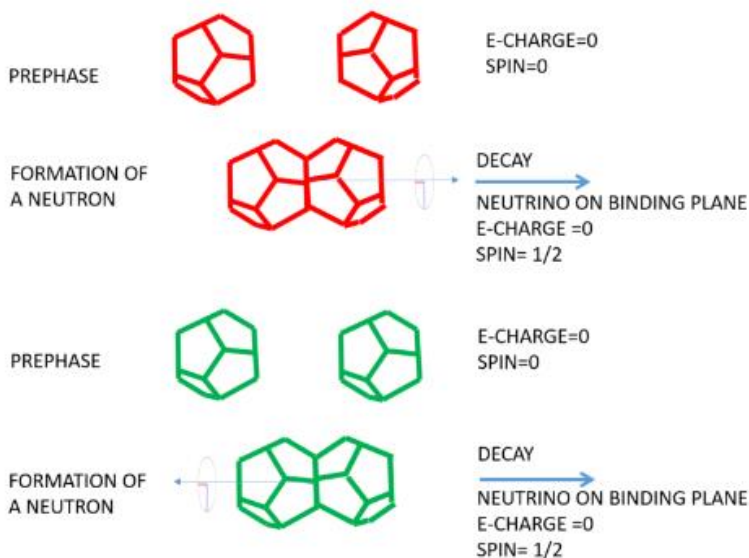
chirality – left-handed or right-handed – of the neutrino and the electron from which the neutrino is a constituent.

For illustrations, the dodecahedrons having outward pointing vectors are colored red and dodecahedrons with inward pointing vectors green.



The neutron emerges when two green or two red dodecahedrons collide.

In illustration:



When individual dodecahedrons are formed, two similarly oscillating dodecahedrons may interfere to form a neutron, under release of a neutrino (ref. above figure).

The logic to allow this combination of two coupled dodecahedrons requires some further elucidation.

There can be only one neutrino positioned on the neutron's common binding plane. This is per the prevailing paradigm known as the Pauli Exclusion Principle. It states that two electrons with equal spin cannot constructively interfere. The Dutch Paradigm makes this more precise, two left, or right-handed neutrinos cannot constructively interfere to avoid manifestations to breach the speed of light.

Binding the two dodecahedrons to form a neutron requires one electron at the designated binding plane to decay and release its neutrino. The residual gamma photon of the broken open electron will restore its manifestation to its symmetric status. After the neutrino's ejection, the residual photon enters the state of destructive interference with the remaining electron's photon. The two photons on the binding plane are still in orbit on the binding plane but in destructive interference. There is no observable electron functionality anymore on the binding plane. Only one of the two neutrinos had to give room and was ejected. After the two dodecahedrons' merger has been accomplished, a neutron with a resulting $\frac{1}{2}$ **spin** character has been formed. There is no external observable electrical activity anymore.

Apparently, external high pressure is required on the two dodecahedrons (on the indicated binding plane) for one of the two electrons to decay in this way. After the ejection of one neutrino, the two dodecahedrons' coupling is established to form the neutron.

Here, too, a question arises: where does the high external pressure come from?

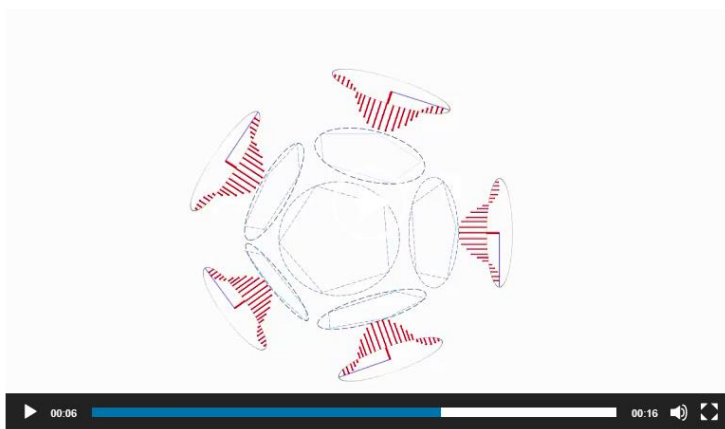
We know that the Pauli Exclusion Principle and the further refinement by The Dutch Paradigm stipulate that electrons with equal spin allow the construct to exhibit tactile properties. It is an absolute necessity for tactile physical actions. It is what we experience in our daily life. We can touch objects because of the inability of two electrons with equal spin to interfere.

Obviously, we need to change this restriction. Such interference is still nearly impossible, but sufficient pressure on two such electrons of equal spin bound in dodecahedrons can initiate the decay of one of the two electrons and force a neutrino to exit.

Such a condition is well imaginable in the early stage of the universe.

To clarify this, we can first, in a very simplified way, imagine that 12 electrons from as many directions focus on the formation of the dodecahedron.

In a simple animation:



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In pairs, two electrons at a distance of some femtometers attract each other due to the Coulomb force. If we assume that all electrons move at a similar speed, then the final spatial confinement occurs in the dodecahedron form.

When locked in the form of a dodecahedron, all 12 electrons come to a mutual stop. The dodecahedron obtains the resulting speed, which for consideration of the model can be practically interpreted as $0c$ relative to the speed of light.

Every electron involved is spatially anchored in this form from this event onwards. In the book *The Dutch Paradigm*, this is stated as:

As a consequence, each electron in the dodecahedron loads itself in the direction of its propagation with kinetic energy at a level $\frac{1}{2}mV^2$. V is the speed differential. The relativistic speed of a naked electron is its proper natural speed at which formation into the electron took place. This loading characteristic with kinetic energy is unknown in regular science. The load in kinetic energy is the equivalent of the transformation of free electric energy in free magnetic energy, by reduction of the frequency of the electron system. The addition to the magnetic manifestation of the electron is the Δhf . That is counterintuitive because in regular science we apply the hidden assumption that the natural rest speed of an electron is unknown. Tests near 0 °K show electrons still have speed.

This increase in the magnetic manifestation of each electron reflects in surface inflation for the electron and volume inflation for de dodecahedron.

Per illustration:

Electron inflation



Therefore, the electron's spatial inflation enters a new phase when absorbed into the dodecahedron structure. Each electron's speed in the dodecahedron will reduce to (approximately) $0c$ of the speed of light. The gamma photon and gamma neutrino frequency will reduce

accordingly. This spatial inflation per electron results for the double dodecahedron - the proton and neutron - in showing a considerable spatial extension.

In an almost explosive manner, many dodecahedrons will form and pressure each other to fit in the limited available spatial volume and, by doing so, form twin dodecahedrons under the ejection of a neutrino. Experimental this is alike the set up of the LEP collider.

The metric validation will be discussed later.

This confinement of space is temporary because the speed of this idealized dodecahedron drops to almost $0c$. Therefore, the dodecahedron and certainly the double dodecahedron will spatially withdraw from the radial fast-moving population of photons, neutrinos, and specifically electrons.

Dodecahedrons are extremely stable as a construct. Once a single or a twin-dodecahedron is formed, it is practically impossible to decay. The electrons involved are no longer part of the still fast-moving population of electrons.

It is a transfer of electrons in extreme chaos while constructing the dodecahedron with extreme stability

Apparently, the chance of double dodecahedron bonding due to high pressure between two dodecahedrons and the release of a neutrino is considerable. There may also be some clumping into multiple dodecahedrons that experience a mild mutual decay with even more neutron bonds. It is conceivable that either a few dodecahedrons will form in the population or even many and then clump together like a neutron star in extremis. We perceive neither of these configurations as dominantly present in the cosmos.

We know that the forces within the dodecahedron are massive. Even at almost the speed of light, a proton keeps its shape, shows no decay.

A lot of research work is required to validate in fine detail these dynamics and process variables. The description explains the structuring principles, and these principles are, in essence, plausible and even causal.

I want to note that we now have the description and plausible explanation in process sequence from an extremely stable pre-Big Bang ordering via chaos, reordering to electrons, again chaos and reordering into another form of stable constructs, now in an observable spatial format. A spatial model or format that allows human tactile behavior.

As explained, a spatial form must be relativized as an illusion. It is an illusion based on electromagnetic manifestations of entities, but still an illusion. If we brought time to a stop, we would not be able to observe anything. It only becomes potentially tangible due to the dodecahedrons' impenetrable nature based on the impossibility of two electrons' constructive interference with the same spin.

It is the ultimate barrier of the speed of light in which the human observer meets the limit of observability. It is hitting this limit in which the illusions meet the senses. It is the essence of the sensorial impression of the illusions.

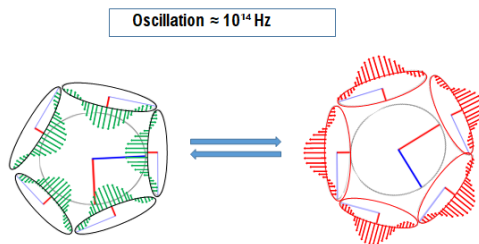
The dodecahedron shows itself to us in our human sensorial ability to observe and manipulate based on our human thinking to model the observation as a spatial construct. The dodecahedron shows itself at the frame rate of our observation as a closed, almost impregnable fortress.

It has a deeper meaning that this fortress is eventually shielded by shells filled with electrons.

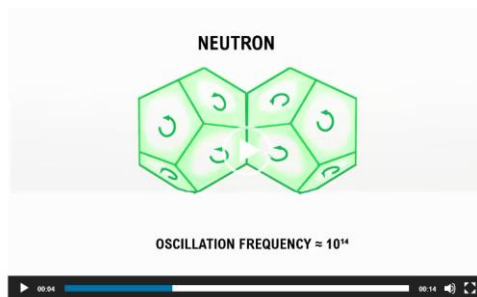
20. NEUTRON/PROTON DECAY

A naked neutron decays to a proton in 15 minutes on average. This decay is known as β -decay.

When the force-bound electrons on a 12-facet dodecahedron oscillate, the dodecahedron shows the anisotropy of the electrons' asymmetric electrical manifestation, the “electrical charge in regular terms” - alternately in attraction and repulsion.



The 12 electrons in the dodecahedron structure are balanced in metric properties and oscillate simultaneously and similarly, as shown in the animation below.



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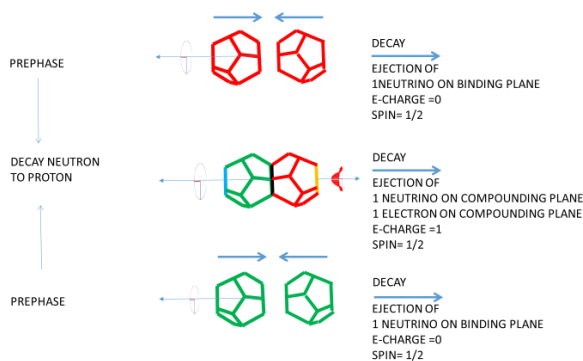
How does a naked neutron decay into a proton, which is generally referred to as β -decay?

In the double dodecahedron model, β -decay causes the two dodecahedrons to oscillate simultaneously, but in a different mode of chirality of the neutrinos, $+\frac{1}{2}$ and $-\frac{1}{2}$ spin.

This refers in the book *The Dutch Paradigm* to chapter 36, page. 123-126.

For the neutron, both dodecahedrons are in the same state of oscillation. In the Dutch Paradigm model, β -decay initiates when the state of oscillation of the twin dodecahedrons changes to the opposite mode relative to each other.

In illustration:



In the pre-phase, two dodecahedrons collide into the neutron under the ejection of one neutrino out of the binding plane. The next phase is the β -decay. This β -decay initiates whenever one of the dodecahedrons start oscillating opposite to the other. This due to an external event of magnetic nature, as indicated for the change-over in chirality for the neutrino.

During the β -decay, there is the ejection of an electron and a neutrino.

The alternating spin mode creates a fundamentally different situation at the bonding plane. The neutron contains a single neutrino in the bonding plane, while the two native photons in that plane are in a state of destructive interference with one another. This externally manifests itself in observable $\frac{1}{2}$ **spin** and no electrical activity. The proton has the two dodecahedrons oscillating in opposite spin nature. Consequently, the two photons in the bonding plane are in a position of constructive interference. However, this interference is actually not feasible because both photons run at gamma frequency. This form of interference would cause the manifestations to exceed the speed of light, which is not possible.

What happens to prevent the overrun?

There are various scenarios for this, but there appears to be a preference for one of them. We measure that a proton, after formation, will display the “electric charge” phenomenon permanently and in the same characteristic of asymmetry. One of the two gamma photons in the bonding plane apparently forms an electron bond with the gamma neutrino residing in that plane. The second photon is not ejected but remains in the electrical manifestation's symmetrical state before the photon participated in forming an electron. Externally, this photon remains electrically neutral. The two gamma photons in circulation remain active on the bond plane. The proton then shows from the bonding plane the known electrical nature of the electron.

The neutron changes permanently into an electrically active proton.

The two dodecahedrons' nature alternates through oscillation with their electrons between attraction and repulsion, but the electron's nature on

the bonding plane does not follow this pattern. It does not alternate in anymore; its nature is fixed. This means that the neutrino at oscillation on the binding plane alternates its interference with the other available photon. It changes in photon – there are two photons available on the bonding plane - to maintain its preferred bond to form the electron in that binding plane. As indicated in the figure above, there is a preference for one of the possible electron configurations in the combination of co- or counter-spinning neutrino - left- or right-handed chirality - regularly shown as $\frac{1}{2}$ **spin** character.

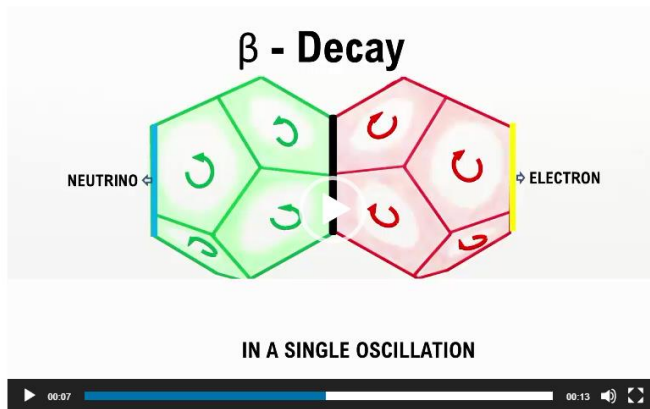
The neutron changes at β -decay permanently into an electrically active proton with a preferred nature on the binding plane of the two dodecahedrons.

This phenomenon of preference for a specific electron configuration is also known in the spinor unwinding when two naked electrons approach each other. While approaching, there is a preference for positioning towards a mutual nature of attraction. This will not be elaborated further at this point. It is possible to confirm this metrically with the data known by now.

The establishment of an electron in the binding plane with a permanent nature has consequences for the occupation of the two opposite end faces of the participating dodecahedrons. On the one face, a neutrino is ejected, and the photon remains. On the other face, the entire electron is ejected out of the construct.

The entire behavior of β -decay is referred to in the prevailing paradigm as the weak nuclear force between quarks.

An animation is available on the website TheDutchParadigm to illustrate the β -decay graphically:



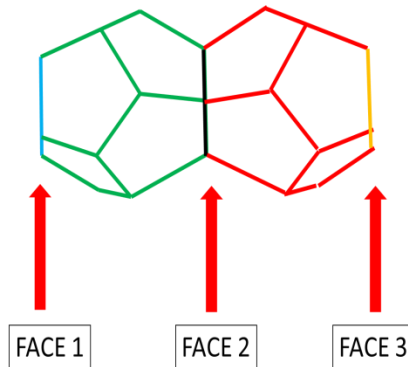
<http://thedutchparadigm.org/contact/contact/>

This settlement of the β -decay, included the sequence of decay on the opposing faces, has not yet been calculated but is initially accepted from The Dutch Paradigm as an objectified observation.

There appears to be a logical explanation for this phenomenon. The electrons on the two opposite end faces differ according to the above-reported electron in binding preference and, therefore, stability. This is important on the binding plane but also on end faces. Suppose the newly formed electron arises on the binding plane with a phase difference with the outermost electrons. In that case, a concise but well-defined time sequence occurs in the unwinding of the β -decay. I suspect that during the passage of that phase difference time-sequentially, the neutrino of the weaker bound electron is first ejected by repulsion. Subsequently, the electron on the binding plane arrives at full force of repulsion and ejects the stronger bound electron.

The binding plane's resulting situation is called the proton bond to distinguish it from the neutron bond.

In the book *The Dutch Paradigm*, the situation on end faces and the bond face is summarized as follows:



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 this face. 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 ejected. The resulting spin in this plane is 0, and there is no electric manifestation anymore.

Face 2: In this binding face is the *proton bond*.

There is 1 electron in that binding face and an additional gamma photon, which originates from the neutron bond.

The previous chapter concluded that a single dodecahedron closes itself off from the environment as an almost impregnable fortress (ref. The Pauli Exclusion Principle). It can now be concluded that β -decay can break this fortress at the end faces. These end faces then allow other dodecahedrons to attach themselves to the newly formed proton.

It should also be noted that the β -decay discussed here is the most extensive form and will occur if the end faces do not (yet) contain pre-existing bonds with one or more dodecahedrons.

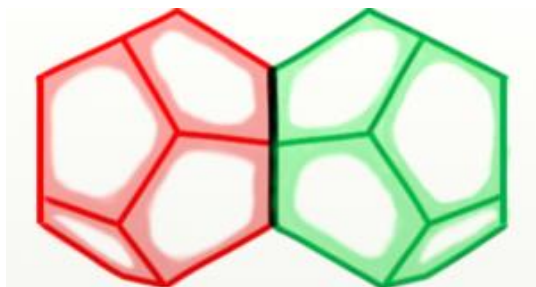
The β -decay can also occur with dodecahedrons of multiply bound neutrons.

21. METRIC CALCULATION IN REVERSE MODE

The proton is the first construct in the emerging universe that shows measurable dimensions. It exhibits its spatiality through signal interference with the measuring instrument. It must be noted while measuring the dimensions that the proton is a dynamically active construct. The metric values reflect the average value of the dimensions.

The proton's composition is believed to be what the researchers envision based on the observed behavior of the construct. Within the prevailing paradigm, the proton is assumed to be a spherical construct, and therefore a radius is reported.

The double dodecahedron model of the proton is as per The Dutch Paradigm:



This model, too, arises from the human imagination of what appears to be the time-sequential form in which the electromagnetic manifestations make themselves known to us. Making a known to us through a very frequent renewal of a spatial illusion in itself.

It then seems a strange assumption that you can determine measurable spatial dimensions of an illusion.

Yet this is possible.

This illusion of the dodecahedrons - or in general, of objects - arises from our low-frequency or instrumental sensory perception. All observations and measurements that we humans make are based on countless repetitive interferences from the realm of physical appearances. You could say that this is comparable to time exposure, a prolonged opening of the camera shutter in photographic terms.

The proton reflects numerous photons in the visible region in our eye.

The sense of touch is subject to other forms of perception. Tactility is the experience of resistance to interference from two neutrinos of the same spin, known as the Pauli Exclusion Principle. Neutrinos as part of electrons in the outer shell of an atom. This process takes place on the contact surface of the fingers and the object. We cannot consciously touch a proton, but if we could, the proton would reveal itself to us as a self-contained, tangibly impenetrable object. The tangibility then reflects the Pauli Exclusion Principle as defined in the prevailing paradigm.

Thus, in our perception, the proton appears as a stable spatial construct, and the measurable dimensional values can serve as a starting point for further considerations. Yet we must always realize that such an object is an illusion affected by intangible energetic electromagnetic manifestations of entities.

When we perceive sensory information, we know that we information is mentally processed at a low frequency, as limited by our senses' and thinking capability. As we could increase the frequency of perception, the illusion fades and we enter the realm of observing the actual entities' high frequent refreshed manifestations. If we observe at the speed of light, the illusions are no longer there; there is no movement in time to feed our thinking.

If we go back to what we can measure nowadays, then these measurements are still observations at a low-frequency level compared to gamma frequencies. This applies, even more when I calculate the starting conditions of the observable manifestations of the entities' photon and the neutrino. Therefore, I accept calculating with orders of magnitude and will only be more precisely whenever meaningful and necessary. References are made to the thinking experiments for extremes, for observing at almost the speed of light and observing at a speed of $0c$. The aim is to test the structure's validity in models relevant to our compounding sensorial perception and tangibility in form.

In the book, *The Dutch Paradigm*, in chapter 38, preliminary calculations have been performed with this in mind. These calculations are cited here and further explained in a few places in between this text.

Contrary to the order in the book, the neutron calculation follows first, page 140.

The size of a neutron is well established as relative to a proton and stated in radii that are available from <http://www.slac.stanford.edu/econf/C110613/slides/215-slides.pdf>

The “radius” of a neutron is **0,895 fm**. Through the twin dodecahedron structure, this defines the wavelength of a gluon on a plane of the dodecahedron. 1 femtometer is $1\text{fm}=10^{-15}$ meter.

I use the designation gluon here. This may cause some confusion. The name gluon refers in *The Dutch Paradigm* to the gamma photon as a constituent of the electron. This is also indicated at various places in the text; see also p. 144. I sometimes use gluon as the short name for this gamma- photon because it manifests itself in a specific way in the electron through its asymmetric manifestation. It is a special form of exogenous noticeable electric manifestation of a gamma-photon and is

therefore referred to as gluon. It thereby also performs the function of anchoring the 12 electrons by mutually attracting Coulomb forces within the dodecahedron's configuration.

The size of the twin dodecahedron structure is then estimated to be $2 * 0,895 = 1,79 \text{ fm}$. The length of the standing wave of the gluon is equal to the perimeter of a face of the dodecahedron and is therefore approximately 2 fm . The gluon will continue at the speed of light while circling the face of the dodecahedron as part of the original electron being one of the constituents.

Again, these are approximate calculations. The sides of the dodecahedron do not have the shape of a circle. They are pentagrams, and the trajectory that the gamma photon in the electron ("gluon") follows is somewhere between a circle and the circumference of a pentagram.

The frequency related to this wavelength is $f = v/\lambda$ or $f = 3 * 10^8 / 2 * 10^{-15} = 1,5 * 10^{23} \text{ Hz}$.

This calculation confirms that a photon in an electron in the dodecahedron is active at a gamma frequency. It further substantiates the quality of the dodecahedron model as the basis for the neutron and proton.

The "mass" of a neutron is $939,565378 \text{ MeV}/c^2$, so free electric quant energy up to $939,6 \text{ MeV}$ is converted in additional free magnetic quant compensation.

It has been discussed previously that a reduction in the frequency of the photon and neutrino in an electron is necessary if the construct in which that electron is incorporated is further slowed down in the speed of propagation relative to the speed of light. This decrease in frequency has

also caused the spatial inflation of the dodecahedron. The spatial - unknown - velocity of the neutron at the time of the measurement is neglected in the calculation.

The free energy still available for further encounters is following out of the equation

$$\mathbf{E}=\mathbf{hf} \quad \text{being} \quad \mathbf{E}=4,135.10^{-15} \cdot 1,5.10^{23}=6,20.10^8 \text{ eV}=620 \text{ MeV}$$

related to the constituents of **24** gluons and **23** neutrinos.

The remaining electrical quantity is calculated here, according to the well-known formula $\mathbf{E} = \mathbf{hf}$.

So, the reduction in free energy per single entity of **47** is **939,6/48= 19,6 MeV**. That translates into an estimate for the original starting frequency as per period 3.

In the formation of the electron, it was discussed that the reduction of the frequency of the gamma photon and gamma neutrino leads to a reduction of the free electrical quant of $\mathbf{E} = \Delta\mathbf{hf}$. This reduction induced a free magnetic quant of the same energy content as the gamma photon's reduced manifestation. After the electron's earlier formation and when the dodecahedron is formed, each gamma photon (gluon) frequency is further reduced, and the free magnetic quantum is increased.

This starting frequency will be approximately proportional higher with a factor of $(620+ 19,6)/620= 1,03$.

*That makes a start frequency of **1,54.10²³ Hz**.*

Although much has happened since the free electric quant's creation and operation, the interferences' influence on this free electric quant's energy content is still limited. The simplifications in the calculations indicated by me have little relevance to the outcome and line of thinking.

Chapter 38 of the book *The Dutch Paradigm* contains additional metric values. In particular, the calculation of the electron is provided here with some further explanation:

The “invariant mass” of an electron is **0,510998928 MeV/c²**. The related energy content of this invariant mass is **0,510998928 MeV**. That is the free energy equivalent transferred to “mass” while reducing the frequencies of the free electric manifestations and the two entities' electromagnetic system that merged into the electron.

The prevailing paradigm identifies invariant mass as a mass that cannot be converted into energy. But, there is no such thing as “mass,” and, therefore, there is no “invariant mass” either. Mass is not a property but a conversion of free electrical quant energy into free magnetic quant energy. The formula $E = mc^2$ requires a different explanation. All entities with their sensory observable electromagnetic manifestations released at the speed of light at the Big Bang were “massless.” With the subsequent interferences of electrons into a dodecahedron, the construct's speed is reduced, even to **0c** relative to light's speed. Energy from the free electric quant has been converted into a free magnetic quant. This quant exerts the properties of attraction induced by the proton and neutron. An attraction that we know since Isaac Newton as the gravitational force.

The assumption is an equal transfer of energy by both constituents. The difference in frequency for the gluon and the neutrino is still there.

The name gluon has been used here as well rather than stating the “asymmetrical electrical manifestation of the gamma photon in an electron.”

For each of the two constituents, a portion of **0,5*0,510998928 MeV** transfers into an active free magnetic compensation, with a reduction in speed relative to the speed of light.

If we compare this with the reduction of electrons' free energy as bound in the dodecahedron, then we see **19,6 MeV** compared to **0,255 MeV**. That implies a frequency reduction factor for each constituent of an electron relative to the starting conditions of **(620+0,255)/620= 1,0004**.

If we assume that the highest frequency observed for gamma rays is valid for the initial frequency, then this forming of an electron has induced a reduction of the gluon and neutrino frequency. This reduction is to approximately **1,533.10²³ Hz**. That reduction is rather limited compared to the start frequency of **1,54.10²³ Hz**, all in the SI system metrics.

There is no clear understanding of the size or spatial representation of the electron.

It is not clear which property of an electron reflects its spatial boundary. Moreover, an electron can be slowed down or accelerated in speed while adjusting the frequency. The electron is, therefore, variant in those properties. This is currently not recognized, while in The Dutch Paradigm, this follows from the electron's spatial inflation in the dodecahedron structure.

Compared with the electron in a naked neutron, the difference between the amalgamation of the constituents in a naked

electron is in the order of magnitude of $939/(47*0,5)=40$ in extended spatial representation. Without jumping to conclusions, it is noticeable that there are no major discrepancies in magnitudes relative to the accepted values of these constructs' properties.

These calculations on the order of magnitude indicate that the Dutch Paradigm line is confirmed in the models' metric values identified for the constructs electron and dodecahedrons.

The next question is whether the neutron and proton models can explain the construction of more complex nuclei. This will be discussed further in the next chapter.

22. FORMING COMPLEX NUCLEI

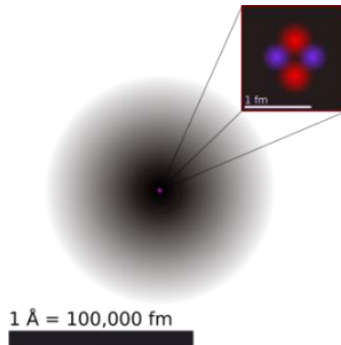
The models for the neutron and proton have been discussed in previous sections. The twin dodecahedron structure defines the neutron model. The proton is subsequently derived from the neutron through β -decay and has the twin dodecahedron structure as well. The available metrics have been validated and support the models of The Dutch Paradigm so far.

It is astounding that the models reflect the properties and metrics as known by instrumental observation and measuring. It is even more astonishing that this result reflects the thinking process that a human being performs to add coherence and logic to visual exposure to what he perceives as objects in the physical world. Objects that, in fact, result from images in our mind constructed of the factual historical paths of electromagnetic manifestations of entities. Manifestations that have been executed at the speed of light and gamma frequencies.

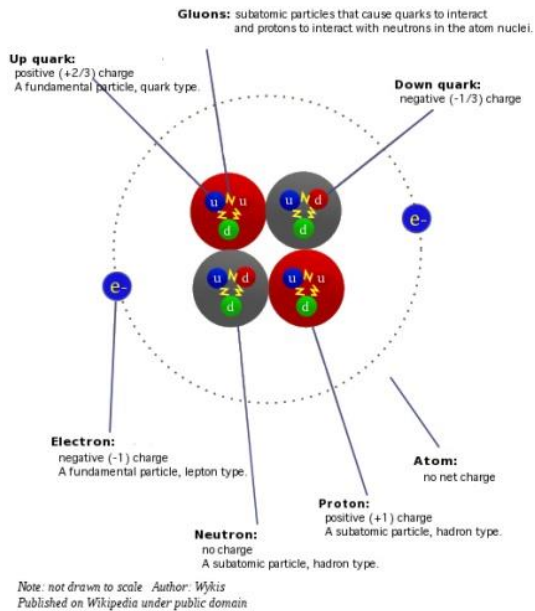
The next step is to determine whether the neutron and proton models can be evolved into models for more complex nuclei.

When we wish to evaluate such more complex nuclei, we must do so in the relative context of what is known about their metric properties. And unfortunately, what is known of measured properties of more complex nuclei is abstract and somewhat limited.

Two examples of the nucleus of Helium according to the prevailing paradigm as per Wikipedia:



A helium atom



These are all very schematic and do not give much guidance.

What is known is that the proton shows a property called “spin.” In the CERN Courier of May 2019 is a wrap up on some issues:

The proton laid bare

8 May 2019

What a proton is depends on how you look at it, or rather on how hard you hit it. A century after Rutherford’s discovery, our picture of this ubiquitous particle is coming into focus, says Amanda Cooper-Sarkar.

The proton spin crisis



Among many misconceptions in the description of the proton presented in undergraduate physics lectures is the origin of the proton’s spin. When we tell students about the three quarks in a proton, we usually say that its spin (equal to one half) comes from the arithmetic of three spin- $\frac{1}{2}$ quarks that align themselves such that two point “up” and one points “down”. However, as shown in measurements of the spin taken by quarks in deep-inelastic-scattering experiments in which both the lepton beam and the proton target are polarized, this is not

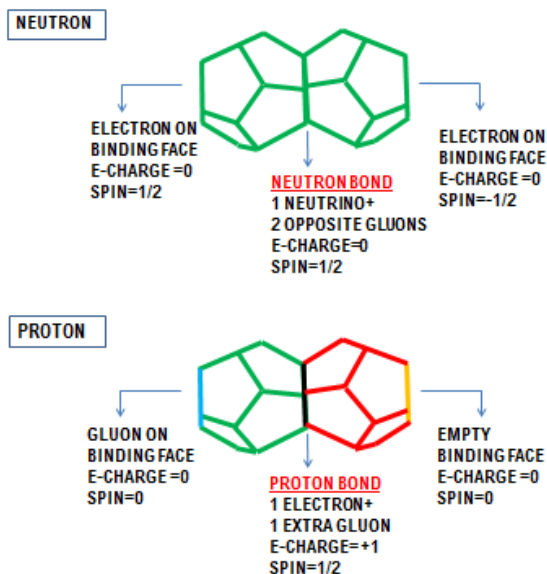
the case. Rather, as first revealed in results from the European Muon Collaboration in CERN's North Area in 1987, the quarks account for less than a third of the total proton spin. This was nicknamed the proton's "spin crisis", and attempts to fully resolve it remain the goal of experiments today.

Physicists had to develop cleverer experiments, for example looking at semi-inclusive measurements of fast pions and kaons in the final state, and using polarized proton-proton scattering, to determine where the missing spin comes from. It is now established that about 30% of the proton spin is in the valence quarks. Intriguingly, this is made up of +65% from up-valence and -35% from down-valence quarks. The sea seems to be unpolarized, and about 20% of the proton's spin is in gluon polarization, though it is not possible to measure this accurately across a wide kinematic range. Nevertheless, it seems unlikely that all of the missing spin is in gluons, and the puzzle is not yet solved.

What could the origin of the remaining ~50% of the proton's spin be? The answer may lie in the orbital angular momentum of both the quarks and the gluons, but it is difficult to measure this directly. Orbital angular momentum is certainly connected to the transverse structure of the proton. The partons' transverse momentum must also be considered, and there is the transverse position of the partons, and the transverse, as opposed to longitudinal, spin. Multi-dimensional measurements of transverse momentum distributions and generalized parton distributions can give access to orbital angular momentum. Such measurements are underway at Jefferson Laboratory, and are also a core part of the future Electron-Ion Collider programme.

Amanda Cooper-Sarkar, University of Oxford.

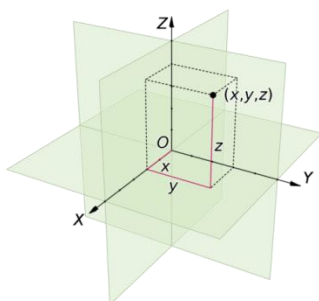
My starting point in The Dutch Paradigm is the model for the proton and the neutron:



To study the construction of more complex nuclei, I project a single horizontal axis through the blue, black, and yellow faces. The electromagnetic manifestations at these particular faces are specific to each face and assessed by simple arithmetic calculations. Nevertheless, for the sake of simplicity, I will use the nomenclature as per the present paradigm. The three faces differ in E-charge and $\frac{1}{2}$ **spin**. All other faces have mutually compensating properties for E-charge and $\frac{1}{2}$ **spin**.

Evidently, complex nuclei of atoms are not necessarily built up stacking dodecahedrons on a single axis. Still, we can try to determine which building logic apparently applies as a first assessment.

When it is possible to understand the logic of building more complex nuclei by stacking dodecahedrons on a single axis, that indicates that a next step can be explored, stacking the dodecahedrons orthogonal three-axis arrangement.



The E-charge and spin can be plotted as independent variables on the three-axis. The E-charge and $\frac{1}{2}$ **spin** are anisotropic. Whenever the nucleus tumbles in high frequency, such anisotropic behavior will become quasi-isotropic for a human observer.

First, building the more complex nuclei on a single linear axis.

The exercise is laid down in chapter 37, pages 127 - 134 of the book *The Dutch Paradigm*.

The starting point is (i) that at least 1 proton is included in all nuclei (ii) such proton is in a configuration state having two end faces after neutron β -decay.

It is impossible to construct more complex nuclei by just sticking protons together.

Two protons in position to form an assembly will repel when the electric vectors point in the same direction. Under such conditions, they cannot form a new construct.

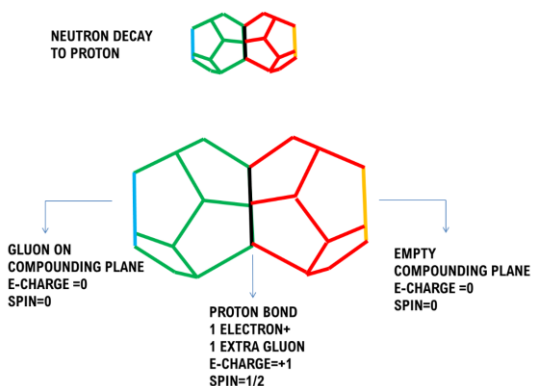
However, there are two possibilities for a pair of protons to assemble into a new construct.

We know by now that in a single dodecahedron, we have pairs of electric vectors that mutually neutralize their effects. Each opposite pair is in an electron/positron configuration but separated. They can compensate and neutralize one another but not annihilate. These vectors are still there but act counteractive in their electrical impact on the assembled dodecahedron.

It is impossible to construct more complex nuclei by just sticking protons together.

It is referred to as the electron/positron configuration. Here too, the term positron is used in line with what is customary in the prevailing paradigm. A positron and an electron are the same type of entity but differ in the oscillation phase.

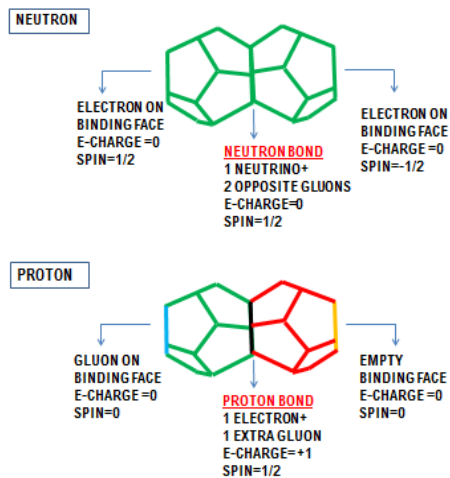
If we focus our attention on the proton first, we can draw the scheme as follows:



Note 1: the name of gamma photon in circulation in an electron is “gluon.”

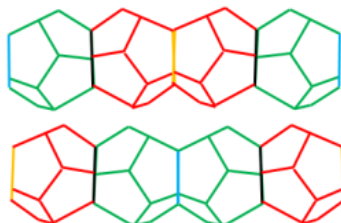
Note 2: the green and red as previously defined, a blue-colored face has only a gluon, and a yellow face is empty.

The schematic representation of the neutron and the proton is:



The model allows for the assumption that two protons can merge. There is compensation for each other's electric vectors.

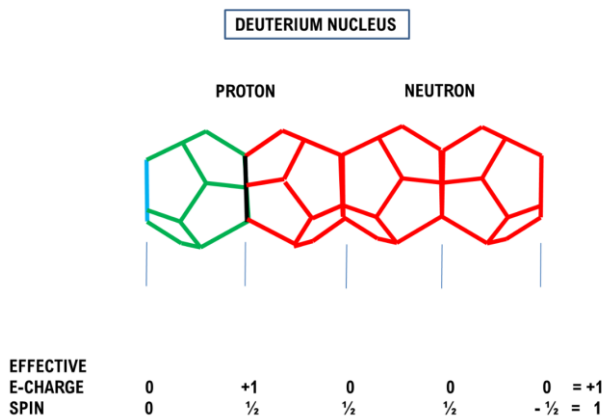
There are two possibilities:



The top version shows a binding face (the yellow face that is empty from both constituent dodecahedrons); the other one show two blue faces with opposite charge vectors, enabling a neutron bond. The two protons' remaining electric vectors 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. Maybe it is there and does exist, but we cannot identify it in another way than through its mass manifestation. Such a two-proton assembly is not very stable. An unsynchronized oscillation will cause decay, like neutron decay.

The neutron plays a major role in configuring multiple protons that show active electrical behavior outside the construct.

The first incident will be that we find an ion structure or nucleus in which one neutron binds itself to a proton. This turns out to be the nucleus of deuterium.

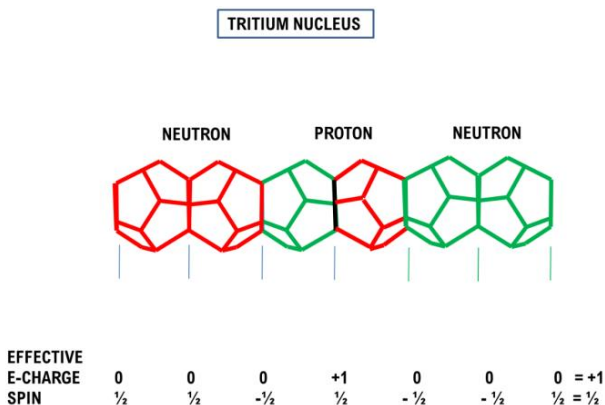


The result of this event apparently follows a simple rule of calculation. The neutron binds itself on the empty face of a

proton, indicated as yellow. The oscillation of the neutron synchronizes with the proton. The spin is a full integer value. The stability of deuterium is high, though it is not extremely high.

The presence of a neutron bond largely determines the stability of a nucleus.

The next step is a possible configuration of the nucleus of tritium.

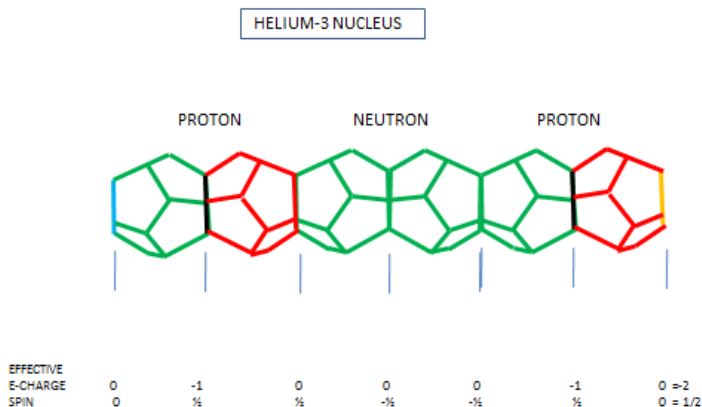


The resulting electric manifestation is +1, and the spin $\frac{1}{2}$. Tritium has an average lifetime of some 12, 32 years and decays to Helium-3. That is due to the left neutron bond to the proton. We find two gluon vectors that point in opposite directions and a neutrino in the center on the compounding plane. Although all dodecahedrons are oscillating in sync, it is this area – this face – that is vulnerable to incidental interference with an external magnetic field. That can trigger the left dodecahedron out of synchronization, resulting in the neutron bond flipping in a proton bond. Consequently, the two vectors of negative charge

within one dodecahedron will point in the same direction, and a repelling force will become effective. The same could happen to the green dodecahedron on the right side. As a result, we can indicate that this nucleus of tritium is relatively stable but is prone to decay when passing through a strong magnetic field. The magnetic field must be strong because, with an average lifespan of 12 years, the active electrical nucleus had become an atom with an electron in the first shell. A neutron can bind to a proton, but as long as these bonds are neutron-based, they will show the risk of instability.

Gradually the rules unfold against which the structure and stability of a nucleus can be judged. This assessment is qualitative and does not provide insight into the expected average lifetime to decay.

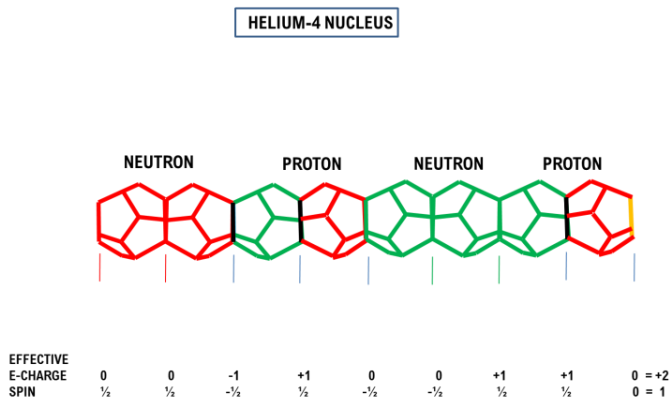
In a further step in the development of more complex nuclei, an additional proton binds itself to the deuterium nucleus and forms Helium-3.



The neutron positions itself in between two protons and binds with one proton in an empty compounding plane. The deuterium nucleus and the other proton in a blue face, one with a gluon and without a neutrino. The vector direction of the two gluons is opposite. Such a configuration is possible and apparently stable because, in this case, all faces are oscillating in the same mode. Whenever one of the dodecahedrons of the neutron oscillates out of synchronization, such a nucleus decays. The two gluons would point in the same direction vector-wise and repel the same electric charge in the neighboring protons. That synchronization is induced by the binding areas and most probably causes some reduction of the constituents' frequencies and a small addition to the mass manifestation.

This relatively small bandwidth of difference in frequency is the fingerprint of each element in [the Periodic Table of Elements](#).

The next step is Helium-4

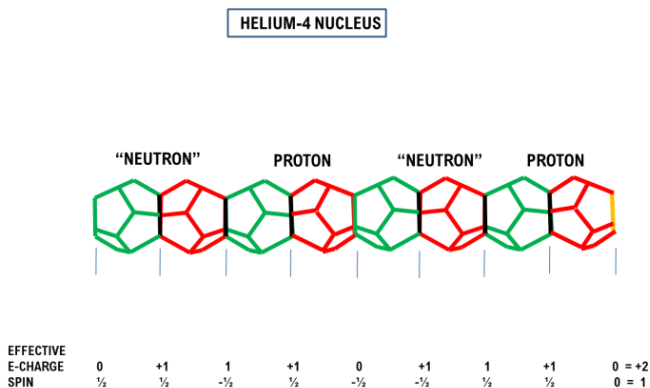


Helium-4 forms by the addition of another neutron to Helium-3.

There are two extra proton bonds, two in the same vector direction and two opposite.

The stability of such a configuration is limited. On the right side, we have two vectors pointing in the same direction, indicating possible decay. The decay of the neutron into a proton in combination with the proton bonds' properties will increase the stability of the construct.

This configuration is:



It is stable. There is a link available of some strong proton bonds with their resulting electric vectors in the same direction, separated by two dodecahedrons.

As from this configuration, it is difficult to assign the dodecahedrons to their origin, being part of a proton or a neutron. It becomes fuzzy, but the functionality per single dodecahedron is very well identifiable.

Early on in the study to build-up more complex nuclei, it becomes clear that it is no longer possible to indicate whether a dodecahedron was part of a proton or a neutron. This means that there is more freedom for the nuclei's building rules to arrive at a stable composition.

Configuring along this line of thinking makes the next steps predictable as well. So far, the build-up of configurations is represented in a line format only to clarify the principles. The factual configuration process results in more spatial structures, possibly with additional neutrons, but they follow the structuring principles as postulated.

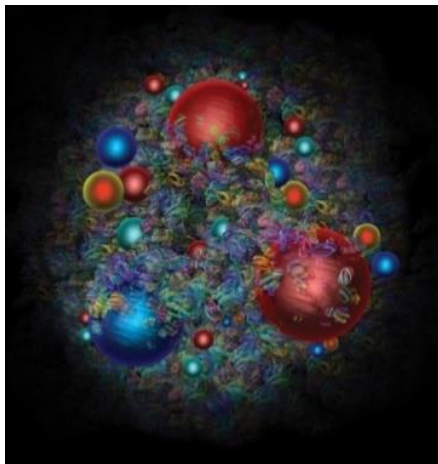
Dodecahedrons can form spatial, more complex nuclei by a combination of using more faces with the neutron bond and other faces in combinations of twin dodecahedrons for proton bonds that are electrically neutral to the outside world.

The rules to configure the nuclei for the elements can translate in an algorithm, with indications for isotopes' stability and presence.

Again, it can be concluded that the double dodecahedron model for the proton and the neutron allows us to understand the structure of more complex nuclei as well, up to and including the stability and formation of isotopes.

The visualization of even more complex nuclei becomes feasible and will be discussed in the next chapter.

This chapter concludes with a somewhat bizarre impression of the proton as visualized by an artist based on CERN information. It is part of the quoted article the CERN Courier of May 2019.



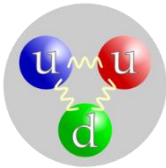
Visualization of quark structure of proton, artist impression

The proton laid bare. Source CERN

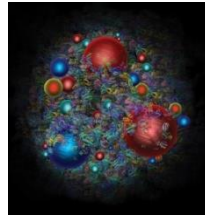
23. 3D MODELING THE NUCLEUS

There is a massive gap between how the prevailing paradigm attempts to model the proton and neutron and the thinking process applied in The Dutch Paradigm. It is my personal opinion that it is inconceivable that the present line of experimenting by mainstream scientists in particle physics will ever lead to a credible model of the proton.

Current paradigm:

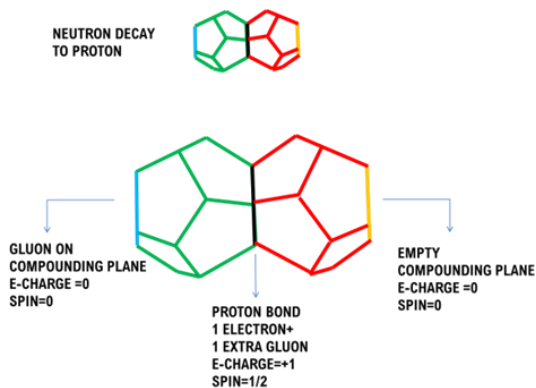


Incomplete & simplified graphic



Artist impression

The Dutch Paradigm:



The Dutch paradigm defines, based on holistic thinking, the proton and neutron in detail and allows for arithmetic evaluation of constructs.

The twin dodecahedrons also allow building more complex nuclei. Eventually, we meet as humans in our habitat these complex nuclei but shielded in the atomic structure. The atomic structure is thereby the base for all objects that we encounter in our physical life.

This is in itself an almost mesmerizing concept. Still, it is our physical world.

The twin dodecahedrons are recognizable in shape, appear even to be tangible, but are in fact, the result of the human's ability to memorize the positions of the electromagnetic manifestations of the entities involved.

In the confined space of a twin dodecahedron - **0,87 fm** -, there are $2 \cdot 2 \cdot 12$ entities active with exposing their free electric quants' positions at the speed of light.

In essence, we can construct a kind of a "snapshot in thinking" of all these positions.

Why these entities present themselves in this repetitive causal sequence is unknown.

It is counterintuitive that electrons arrange themselves out of chaos into the configuration of a dodecahedron. Still, there is a plausible explanation. Even more so, when combinations of two dodecahedrons show properties akin to what we know as the proton and neutron. It triggers a provisional substantiation that this apparently is a compelling ordering principle. The compelling ordering principle is further validated even when we make a simple stack of dodecahedrons on a single orthogonal system axis only. The amalgamation of variables on a single axis is exactly as we know for these complex nuclei's atomic structures.

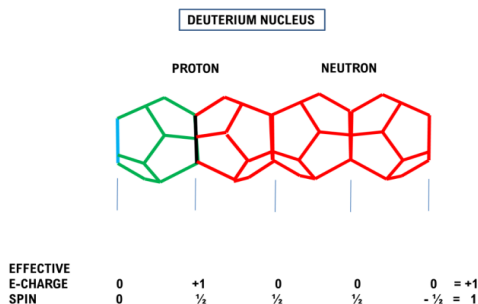
Therefore, it is realistic to accept that forming dodecahedrons has occurred. It shows the human being manifestations in physical space with a clear causal preference for form over chaos. The periods of chaos were intermediate, but functional. It is as mesmerizing as forming crystals in freezing water. It is a principle in construction that can be understood but needs further elucidation and study for relevant process conditions.

We know that eventually, complex nuclei and atoms are formed, and we observe immense galaxies. The stars almost certainly play a part in the formation of complex nuclei. It all happened in the past, but that past is still visually available to us remotely in space and time in a derived form. It can be seen as yet another step in the apparently compelling principle of transforming chaos into the complexity that eventually emerged in life forms. A sequence of progress in complexity up to the existence of man as a thinking and feeling being with the will to act in the physical world.

The next step is by imagining how the more complex nuclei form on the three axes of an orthogonal system. This step is explained in chapter 39, pages 146-151 of the book *The Dutch Paradigm*.

The test for the building for more complex baryons was by linking protons and neutrons into a chain.

The nucleus of Deuterium:



The conclusion was that this is a potentially powerful way of building a model for the nuclei. It is in line with expectations for the electric and spin manifestations for these nuclei.

However, there are remarks to be made:

1. It is highly unlikely that nuclei will build up as a kind of a stick
2. It is becoming unclear to what constituent a specific dodecahedron is to be allocated

We have to rethink the building principles to address issue 1. Issue 2 is not a problem; it only gives additional possibilities to make more complex constructs.

We have to consider that dodecahedrons have 12 faces. The β -decay induced a specific rearrangement in which twin dodecahedrons became available with four specific types of individual face composition:

1. An electron
2. An electron with an additional gluon
3. A gluon
4. Empty

We also know that all dodecahedrons are oscillating in full synchronization.

All dodecahedrons in a nucleus need to oscillate in full synchronization. It requires synchronization of the electromagnetic manifestations in all

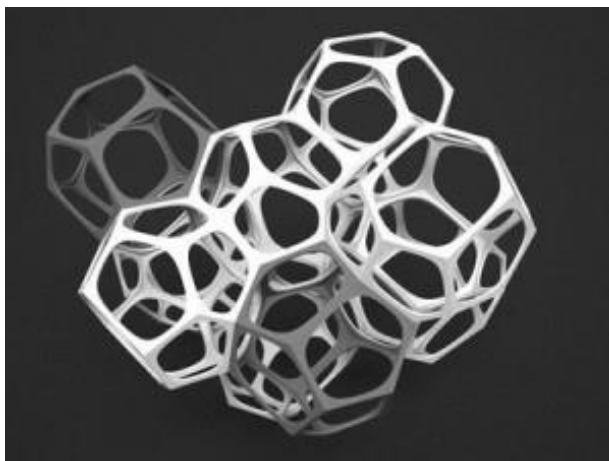
dodecahedrons' electrons and follows the induced Coulomb and Lorentz forces' imperative impact. The Dutch Paradigm can explain what the first principle is for the existence of the Lorentz force. It is in brief discussed in the chapter on the kinetic rest speed of objects.

The fine-tuning in the interferences' frequencies is similar for all associated possible bonding planes within the nucleus. The effect of Lorentz and Coulomb force cascade throughout all of the dodecahedrons to enforce the synchronization. As stated earlier, the power to resist external influences for destructive interference is so massive that the proton, in particular, cannot decay anymore and therefore has acquired extreme longevity.

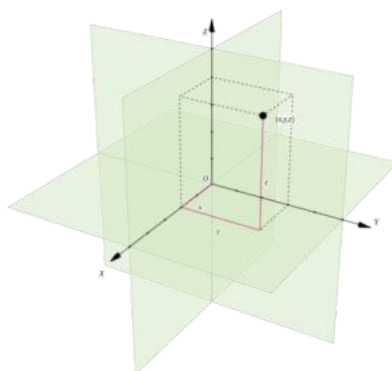
To allow for a more spatial balanced build-up of the nuclei, we consider stacking methods as the close-packing of equal spheres. The assumption that the dodecahedrons arrange in a hexagonal close-packing makes sense.

The Hexagonal close-packing for dodecahedrons requires some spatial adjustment to make a perfect fit.

An example of a configuration in close-packing for dodecahedrons is in this 3D print:



The hexagonal close sphere packing gives the highest packing for balls, with a kissing factor of 12 for each ball. That is in line with the number of faces of a dodecahedron. There is a lot of theory available regarding close-packing, linked to building crystals and foam bubbles ([Weaire-Phelan structure](#)). Therefore, the mathematics for such structures is well known.



The electric vectors of these proton bonds per axis must point in the same direction to be active to the outside world. They are allowed to be configured parallel to one of the three axes of the Euclidean system.

As long as we keep symmetry for all opposite faces – excluded the proton bonds – this will be very helpful to construct the more complex nuclei.

The remainder of the dodecahedron functionality has two basic functions:

1. To allow building up parallel faces in three axes for the proton bounds to be stacked
2. To “glue” the dodecahedrons together

A nucleus stacked on one axis has dodecahedrons with only one to two binding planes with adjacent dodecahedrons. The binding force of the several types of bonds differs, which will impact such a virtual chain's stability. The weakest link is dominant to decay. There are many more bonding planes per dodecahedron in a nucleus in a three-dimensional structure, and therefore the stability is significantly increased.

The dodecahedrons at the ends of each axis can still exhibit low stability. This low stability can participate in the complex nucleus up to only one single bonding plane. This could well be the condition through which an element can show itself through simple decay in different isotopes.

If a neutron bond is broken in the decay process, then there are only limited consequences for the nucleus's characteristics.

The second issue requires several mixes of possible faces on single dodecahedrons.

The adjacent faces of the kissing dodecahedrons can be modified based on the indicated available combinations:

1. An electron
2. An electron with an additional gluon
3. A gluon
4. Empty

These modifications to further bind dodecahedrons in a spatial format require as prerequisite external electrical neutrality. It is quite an amount of work to prepare for all the Periodic Table elements, but this is doable and requires an algorithm's development.

The choices made for this build-up require additional gluons, neutrinos and the like, but that will, in essence, not have a major impact on the mass manifestation of the nucleus.

To compare the impact of a proton bond:

Neutron : 939.565378(21) $\underline{\text{MeV}/c^2}$

Proton : 938.272046(21) $\underline{\text{MeV}/c^2}$

As can be seen, there is no significant impact when proton and neutron bonds are added. Additional gluons and neutrinos are not a problem as well. We only have to be a bit more modest with electrons.

It is quite feasible that these building principles for the nuclei are the major drivers for the more complex nuclei.

It is plausible that complex nuclei will become more stable through the spatial configuration. It is the next causal step in the functional ordering towards a higher level of robust complexity. When these nuclei were formed and how the mix of the many elements differentiated is nevertheless unclear. Is this happening subsequently after the formation of the dodecahedrons, or must the neutrons be clumped together under the influence of the resulting free magnetic quanta's mutual attraction?

The questions are challenging to tackle, and this chapter is just a first appreciation of what has to be done to detail the complex nuclei.

One question will be dealt with in the next chapter: what role do the circumstances under which β -decay will take place play?

24. FORMATION OF THE ATOM

The nucleus transforms into an atom when an electron orbits the nucleus. In our earthly environment, all nuclei are shielded by electrons in one or more orbits. Only hydrogen can make an exception and be stripped of its single electron.

At first sight, it seems remarkable that such shielding with electrons compellingly presents itself as yet another higher form of arrangement of electromagnetic manifestations.

In which sequence of events did this atomic transformation happen? Is the atomic state we observe initiated in the early phase of the universe's creation? The Dutch Paradigm indicates this as quite conceivable.

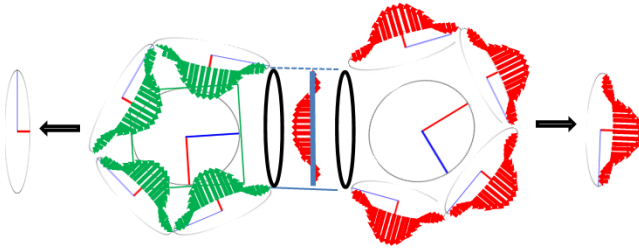
In the early phase of existence of the universe, the proton for atomic Hydrogen was created and possibly nuclei for atomic Helium as well. Still, there is a forewarning to be made here. The forming of atoms does not last at extremely high temperatures. Temperatures that can, under the circumstances, reach several million degrees Celsius.

Nevertheless, you can wonder from which source the electrons emerge that arrange themselves in the orbits around the nucleus.

As discussed previously, after formation of the dodecahedrons, there is a wide-ranging difference in the speed of propagation of naked electrons and single and twin dodecahedrons. How do the spatially separated electrons and dodecahedrons meet to form the atomic structure?

This is due to a remarkable event that occurs in the formation of protons.

β -decay



With every neutron in β -decay, now or in the future, an electron is released that may be captured to start orbiting around a newly formed proton.

In other words:

Each double dodecahedron already has the electron in its construct to allow for atomic formation!

It is indeed another form of higher-order causality intrinsically built-in as per the formation of the dodecahedrons.

With the formation of atoms, we enter the visual observable objects that we encounter in the macrocosmic world. In the book *The Dutch Paradigm*, this topic of atomization is presented in chapter 40:

We now enter the realm of the macrocosmic world, by the forming of electron shells with electrons orbiting around the nucleus.

Much information is available regarding the electron shells. The Dutch Paradigm respects that information, but this new

Paradigm adds consequences on the phenomenon of electrons in orbits not yet recognized by regular science.

Electrons orbit around the nucleus at a speed of approximately **0.01 c**. Each electron has a quant of free electric energy in its constituents that determine the frequency of the electromagnetic systems of the electron and ultimately its orbit's radius.

Electrons in orbit interfere with the electric manifestations of a nucleus while orbiting under the mutual attraction of Coulomb's force. The nucleus manifests a compounded asymmetric electrical manifestation. As described previously within The Dutch Paradigm, but there is a distinct difference with the prevailing paradigm.

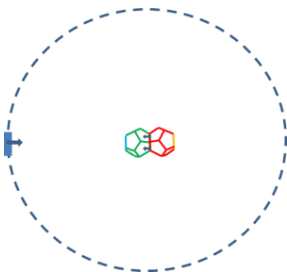
The prevailing paradigm assumes that both the electron and the nucleus have an isotropic manifestation of the "electric charge" of either + or - charge. The Dutch Paradigm indicates an asymmetric electrical manifestation that is anisotropic of nature and has equal character. These differences are consequential for the interference between the electron in orbit and the nucleus.

For the proton and also the more complex nuclei, the electrical manifestations are anisotropic, direction sensitive.

Let us consider the first element Hydrogen. It has 1 proton and $\frac{1}{2}$ spin.

The electric vector of the electron in orbit points towards the electric vector of the proton bond. The electron and the proton are mutually attracting with the Coulomb force, while the electron in orbit is propagating at a high circular speed. Due to that circular movement, the electron induces a rotation of the

nucleus around its axis perpendicular to the proton's electric vector.



In regular science, this is not recognized due to the assumed isotropy for the proton's electric charge.

The prevailing paradigm assumes that the "electrical charge" of a nucleus is isotropic. The same phenomenon is relevant here; whenever the nucleus enters into a fast rotation, the anisotropic activity will show a quasi-isotropic character as explained per The Dutch Paradigm. The rotation of the nucleus results from the electron orbiting the nucleus.

In as well the electron as the proton of the nucleus, energy was transferred in a sense that the electron forced the nucleus to start and maintain rotation, though with a small delay by creating a backlash that will induce the momentum to work and rotate against the inertia of the nucleus. An equilibrium in stable interference is established under the conservation of energy within the system electron in orbit and the proton of the nucleus. The nucleus will follow a pattern that links into the nucleus's inertia and the orbital speed of the electron.

The next nuclei under consideration are Deuterium and Tritium. These are isotopes of Hydrogen and have additional

dodecahedrons. That modifies the interference variables as in the system just mentioned.

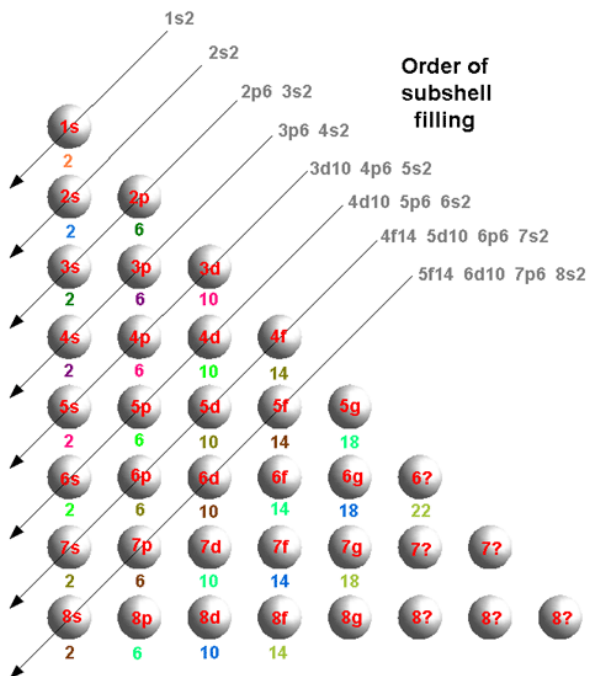
Helium has an electric charge with value of 2. Its electric vectors in the nucleus point along two axes that are perpendicular. The additional electron will also orbit perpendicular to the first electron in the first electron shell. The nucleus now rotates around two axes and has higher levels of gyroscopic behavior.

The third electron is in the second shell. That electron triggers the third axis to rotate and from then onwards, we have a gyroscopic system working in the three Euclidean axes. It has a compounded complex of vibrations along three axes. That is a characteristic of the third element, being Lithium.

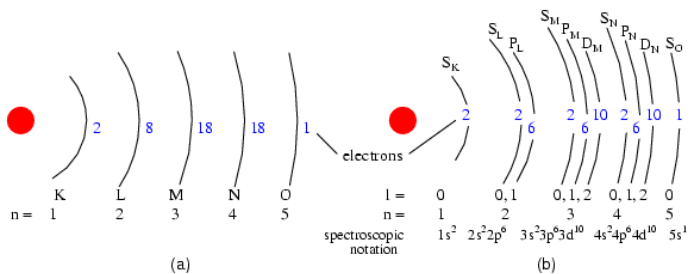
With more electrons and electron shells active, there is another effect. As from the third electron, a second shell houses an electron that will speed at approximately **0.01c**. Consequently, the nucleus will modify its response in inertia, and the electrons in the first shell will reduce in speed. Because the second shell is at a significantly larger diameter relative to the nucleus, the nucleus's angular rate of rotation in its axes will react accordingly.

Due to the electron's postulated anisotropic character, the nucleus reflects or mirrors its composition towards the electrons in the subsequent shells. It has a specific vibrational response, magnetic behavior, and so on. It is all in line with the specifics for the electrons that are the mirror image – though with a translation key – of its electric vector in the nucleus.

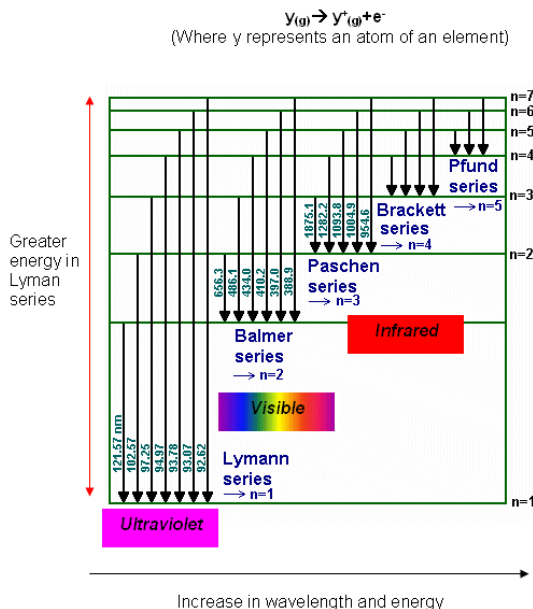
That leads to a set of shells as:



Alternatively, in a different format:



For these shells, there is much information in the so-called Lyman , Balmer, Paschen, Brackett, and Pfund series.



The electrons in orbit oscillate with the frequency of approximately 10^{14} Hz and by doing so, rotate following the spinor functionality. This rotation maintains the position of attraction for the electron with Coulomb’s force with the nucleus.

There is ample knowledge available about the behavior of electrons and the metric data of the orbits. This information can most probably provide some clarification about the structure and behavior of complex nuclei.

25. EPILOGUE

The Dutch Paradigm constitutes the results of a new way of thinking about particle physics. The new paradigm allows modeling from “elementary particles” up to and including the atomic structure. These models allow theoretical scientists to better understand the logical coherence of science's observations on particle physics.

Within the new paradigm, subatomic structures are precisely described and metrically validated. Each subatomic structure contains two types of entities only, being the photon and the neutrino. Therefore, the Standard Model of Elementary Particles reduces into two types of entities, the photon, and the neutrino.

The strong nuclear force, the weak nuclear force, the electromagnetic force, and the gravitational force emerge from the interference of free electrical quantities with the manifestations of other entities. It is the consequences of these free electrical quantities' interferences that allow photons and neutrinos to manifest spatially in the physical world as electrons and dodecahedrons. These two constructions make it possible to form more complex objects.

But what we see and perceive from the objects around us hardly matches what these models of the two structures - the electron and the dodecahedron - represent spatially. We are shielded from the atomic nuclei by electrons orbiting the atomic nuclei. There is no sensory contact with the nuclei.

In any case, the objects that we perceive with our senses do not resemble the spatial features of the nuclei within the atomic structure. We see other people, objects, landscapes, planets and the sun, experience technical applications of our thinking and communicate linguistically with other people. It is as if the nuclei are irrelevant to our sensory contacts with the physical world.

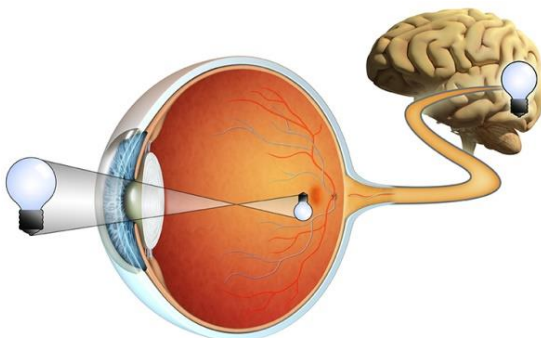
We experience the nuclei indirectly, most prominently only through the spatial features of the atomic structure. We can logically articulate what we experience sensually in order to allow our fellow human beings to understand what we perceive and experience.

By consciously observing the physical environment, an experience of subject / object split arises in our mind. The central question is whether we all experience the same thing in what we think we see.

Do you see what I see, and do you see the same thing?

The physical perception of the objects is the same, but not the individual's mental appreciation for that perception.

In the chapter 'Understanding how sensory impressions arise in the imagination', the figure below is shown:



This figure is an often used but still primitive model for indicating how someone processes a sensory impression into an image in his thinking.

However, the previous chapters of The Dutch Paradigm do not indicate that something like a "lamp" could arise in the physical world. And yet the cause of what we perceive with the senses is due to the interference of the free electrical quants of photons with electrons orbiting a nucleus of dodecahedrons. An object "lamp" is a construction of non-tactile electromagnetic manifestations of entities. Entities that predictably

exhibit electromagnetic manifestations without spatial presence. Such a description does not match to the human story of a 'lamp'.

Yet the lamp is also the result of "a unity that manifests itself in diversity". A unity that can show itself perfectly predictable, divided into an infinite number of entities.

Should we be able to see a lamp?

Or take it a step further, understand that we can make a lamp? That we can use free electric quants to make light?

Little knowledge is available about how humans transform sensory impressions into visual content that we can understand through thinking. It is a miracle that we quickly agree on the image content itself, regardless of whether we like what we see or not.

It's a lamp.

Yet it is problematic to describe that image content. A well-known saying is that a picture says more than 1000 words. With all the information embedded, the sensory content of the image is not in question. It is an objective reflection of what is apparently perceived by humans in the physical world.

It is noteworthy that we agree on the picture content itself.

It is noteworthy that the content of the image is not available in the physical world

As a reminder, the only information available in that physical world is the spatial positions of all entities "free electrical quants." They are presented in an instantaneous event, a flash, a NOW moment. Every Planck time of about 10^{-44} sec, these positions are rearranged, and the new spatial presence is exposed in a new NOW moment. The previous ranking in positions has disappeared. It goes on and on, endlessly. It is a relentless re-exposure of the positions of the free electrical quants at a

rate of 10^{44} renewals per second. That is the basis for any observation with the human eye.

The human being receives the renewal of information at this rate, 10^{44} refreshes per second, or approximately 10^{43} refreshes per frame. That is the base for an eventual observation with the human eye.

There is no lamp to be seen. So how do we come to an agreement on the image of a lamp?

Well, we conclude that we “receive” an image through our visual system at a frame rate of only about 50-60 frames per second. This means that we merge 10^{43} renewals of the NOW exposure of the positions of the free electrical quants into an image. Yet we agree that these 10^{43} innovations are completely the same and are experienced by all observers of that image of the same lamp.

If we observe a still life like in this figure,



then we will agree that nothing is happening in this image, while it needs countless times 10^{44} refreshes per second to keep showing the image. Massive numbers of free electric quants change position to appear in a

spatial pattern that ultimately produces an image that we gratefully judge as "nothing is happening."

This assessment implies that there is causality embedded in this renewal that allows us to recognize the image. We can also mirror the image relative to something we can remember or identify as a familiar object.

We can all see the same still life, but we will become selective in examining the content of the perception once we recognize it. We mainly filter subjectively on recognition and expectation, which in themselves are purely subjective measuring instruments.

We do not argue about the mutually accepted inherently embedded causality that we have incorporated into our ability to recognize this result after numerous iterations of 10^{43} per frame. We take it for granted in our daily life. It is a hidden assumption that the gathering of information from the physical world is objective and inherently causal, as is the process of providing the information in the assumed spatial format. We do not consciously control that process. We are not even aware of it happening. Nevertheless, turn off the light and it stops. Fall asleep and it stops.

We experience the causality within our ability to produce and recognize the image in our thinking

We can conclude that this is an extremely precise, perfectly causal sequence of events.

The notion of causality is:

Wikipedia on causality:

Causality is the relation between an [event](#) (the *cause*) and a second event (the *effect*), where the second event is understood as a physical consequence of the first.

In common usage, causality is also the relation between a set of factors (causes) and a phenomenon (the *effect*). Anything that

affects an effect is a factor of that effect. A direct factor is a factor that affects an effect directly, that is, without any intervening factors. The connection between a cause(s) and an effect in this way can also be referred to as a *causal nexus*.

Causes and effects are typically related to changes, events, or processes; such causes are Aristotle's moving causes.

Causality is inherently a timely sequence of events.

This process of receiving very frequent spatial information in the eye and merging it into the image of an object has some peculiarities. It has limitations in data gathering and data processing.

The image we see appears to be homogeneous, although we know that the resolution is limited by the number and distribution of cones and rods on the retina. We also have a blind spot, but this does not hinder the perceived resolution of the photo. Even with two eyes open we even will not see our nose. Apparently we as humans receive in our "perceiving" an edited reflection of nerve signals in which peculiarities of our vision system are superimposed by additional information. As a unique person I get a reflection of "reality" as input for my thinking process. Such a reflection is still unique in time and cannot be physically repeated or reconstructed. We are able in our mind to remember such an event and more or less reconstruct it to the perceived relevant content. This process of mind recall is a pure activity of thought, performed by our own brain and on its own initiative.

Wikipedia on Thought:

Thought can refer to the [ideas](#) or arrangements of ideas that result from thinking, the act of producing thoughts, or the process of producing thoughts. Although thought is a fundamental human activity familiar to everyone, there is no generally accepted agreement as to what thought is or how it is

created. Thoughts are the result or product of either spontaneous or willed acts of thinking.

Because thought underlies many human actions and interactions, understanding its physical and metaphysical origins, processes, and effects has been a longstanding goal of many academic disciplines including psychology, neuroscience, [philosophy](#), [artificial intelligence](#), biology, and sociology.

Thinking allows humans to make sense of, interpret, represent or [model](#) the world they experience, and to make predictions about that world. It is therefore helpful to an organism with needs, objectives, and desires as it makes [plans](#) or otherwise attempts to accomplish those goals. Thoughts are the keys which determine one's goal.

A human's thinking uses his memory to understand the imprints of the free electric quants in his consciousness.

Remember the footsteps on the shore:



Who was walking there?



What is painted in this still life?

We start thinking about the image once we recognize it. We have only a limited number of frames available to produce thoughts and try to understand the embedded causality in what presents itself to us. We can assess how this perceived reality is potentially open to adaptation to subjective personal desires. For instance, I can use the lamp once it is connected to the mains. How long did the fruit stay fresh while being

painted? The act of subjective improvement requires participation in physical reality. It is the sequence of thinking, feeling and acting. This sequence aims to impose a causal impact on physical reality according to an assumed and personally preferred effect.

Essentially, we exercise causality by imposing our will on altering physical reality. Reality will follow the laws of nature regardless of human intervention. It is again a stochastic impact on the free electrical quants, with a strict and perfect response inherent in the electromagnetic system of each entity.

The Dutch Paradigm will arouse interest in further holistic research into the evolution of the objects we encounter in the physical world. Objects also in the form of living beings in nature up to and including our human body. We now have a split in areas that arouse scientific interest. The Dutch Paradigm tries to cover particle physics and as such has limited itself to that realm of subatomic phenomena.

A significant difference is that the Dutch Paradigm research method tries to understand the causal relationship of what we perceive, observe, feel and want to adapt to our wishes, and that research is not based anymore on a further reduction of matter to destruction, but through the study of evolution of phenomena.

The transition to the physical universe started with the Big Bang. Entities were released and induced chaos while transforming into higher levels of physical complexity.

This quest for a better understanding of the causality from the first principles to higher levels of complexity must be continued.

Still, even well-known phenomena with inherent roots in the atomic and subatomic structures are still a mystery.

As an example: Newton gave us Newton's laws of motion. His first law describes inertia.

Wikipedia:

Inertia is the resistance of any physical [object](#) to any change in its [velocity](#). This includes changes to the object's [speed](#), or [direction](#) of motion. An aspect of this property is the tendency of objects to keep moving in a straight line at a constant speed, when no [forces](#) act upon them.

We are well aware of the day-to-day implications of this law. But how does this translate into an impact at the atomic and subatomic level?

At the beginning of the physical universe was the Big Bang. Our habitat, the atoms of the Earth, has since gained speed and we are moving in a still expanding universe. In order for an object to move faster, Newton's law explains that according to the equation, a force must have been exerted on mass as per the equation of

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

Where **F** is the force that imposes an acceleration **a** on the mass **m** of the object.

Launching a vehicle into space is a daunting task. When that is done, all the energy to accelerate will be absorbed into the atoms of the spaceship and space travelers. It is strange to observe that this accumulated energy has no noticeable influence on the experiences of the space travelers within the spacecraft.



As we live on Earth, our atoms must also have undergone tremendous acceleration since the Big Bang to get to their current position in space. Again, we do not see this energy reflected and preserved in the models of the regular paradigm. There is the problem that inertia is related to the concept of "mass" and "mass" is not identified in the prevailing paradigm, nor in The Dutch Paradigm. The gravitational attraction attributed to mass arises in The Dutch Paradigm from the transfer of Δhf energy from the free electric quant to the free magnetic quant. But this translates into a quasi-isotropic attraction and therefore cannot be the source of the direction-specific inertia phenomenon

Although this chapter is the Epilogue, there will be a two-chapter encore in this book on how a scientific explanation can emerge within The Dutch Paradigm.

It is the prelude for further study.

26. KINETIC REST SPEED

The gamma photon and gamma neutrino are released into space at the speed of light. Even after forming the construct electron, the electromagnetic manifestations of the entities that make up the electron continue to propagate at the speed of light. The electric and magnetic manifestations follow at the speed of light the free electric quant of each entity but with 1 Planck time delay. The reference to the speed of light is permanently built into the electron by the photon orbiting within it. Even once an electron becomes part of a dodecahedron, this reference to the speed of light is preserved.

Once an electron is formed, the electron's propagation speed had to be reduced. This reduction occurs in conjunction with lowering the frequency of the constituents' electromagnetic systems, the photon, and neutrino. The reduction is necessary for the free electrical quants in the electron to maintain their respective speed of light.

Not faster, not slower.

The wording used may be confusing because it talks about going down in speed, down in frequency, letting the free electrical quant keep its speed of light.

Faster or decrease or maintain compared to what?

Zero references must be available to determine this. The Dutch Paradigm takes as zero references for the states of motion of the free electric quantities, the moment when the electromagnetic systems become - after the Big Bang - active again. This moment of re-entry is the starting situation. It defines the zero references. The very moment when electromagnetic manifestations, more precisely the free electric quants, first appear in physical space.

Choosing this starting situation makes sense. We can determine the speed of light and the Planck quantities and record them metrically. Even billions of years after the event of the Big Bang. The Big Bang took place over 13 billion years ago and can only be accessed in reverse engineering. A form of reverse engineering that we perform by a thought exercise.

Instinctively, an old problem of causal experience reoccurs. From a historical perspective, people tend to make their living environment and their own experiences as a zero reference. The norm for the perception of reality is self-centered. It is a nagging habit to do so.

This perception has shifted over the centuries. It became clear that the geocentric viewpoint had to be adjusted. The Earth is spherical and revolves around the Sun. Our solar system is part of a galaxy, the Milky Way. The physical universe was created after the Big Bang. Since then, the egocentric experience came further into a broader perspective. Powerful telescopes make it clear that we have a minute physical place in the whole of the physical universe.

We must now mentally realize that everything around us is merely a sensory impression of electromagnetic manifestation, operating at gamma frequencies and the speed of light. Manifestations of entities interconnected by the free electrical quants through interferences in the electron and dodecahedron.

Our physical structure is atomic, made of nuclei with electrons around orbiting as a shield. It is made up entirely of electromagnetic manifestations. A further search for mass will not yield solid matter.

We realize that electrons can move at high speed and that we as humans can hardly reach those speeds.

The atoms have undergone the highest possible reduction in speed from the speed of light.

We also know that it is a challenge to accelerate ourselves and our contraptions from Earth to higher speeds.

Accelerating constructs made of atoms is an enormous task.



Even accelerating protons to the speed of light with the Large Hadron Collider in Geneva is extremely difficult.



It is then counterintuitive to accept that we are nevertheless made up of atoms built within themselves from manifestations of free electrical quants at the speed of light.

The Dutch Paradigm proclaims that this decline in speed from the speed of light happened in two steps:

1. The formation of electrons
2. The formation of dodecahedrons

Both types of constructs necessitate a slowdown in propagation speed.

The development of the two types of constructs through interference is described in previous chapters. In two phases, the frequency of the manifestations is also lowered from the starting frequency of each free electrical quant of each participating photon and neutrino.

From our human position, we judge this decrease in speed relative to the speed of light as an enormous slowing down of the propagation speed of the atoms. Atoms that have amassed and constitute our body and the environment. The constituent entities come from the speed of light and show their manifestations within the atoms at the speed of light, yet the atom hardly shows as an object to have any speed of propagation anymore. It is all very counterintuitive.

The Dutch Paradigm describes the forming of twin dodecahedra and electrons. No external force is involved in forming the constructs as per $\mathbf{F} = m\mathbf{a}$ as theorized by Newton. We are quite attached to that mass because we “know” that macrocosmic Newton's law shows us the right way to accelerate and slow down “mass.”

For entirely understandable reasons, this reference to the speed of light for objects is not practically applicable in our earthly conditions. We also keep looking for the material source for “mass” because we have to accelerate it to get up to speed. The idea that we have to use so much

energy to speed up “electromagnetic manifestations” is also not easy to grasp.

In summary: as humans, we work comfortably at relative speeds. The zero references are chosen arbitrarily. Inextricably linked to this is that we do not know the history of kinetic energy absorbed so far within a construct. In our practical calculations, we only value a relative change in the kinetic energy. We do not experience any hindrance by this lack of knowledge to correctly predicting objects' expected dynamic behavior in our earthly environment.

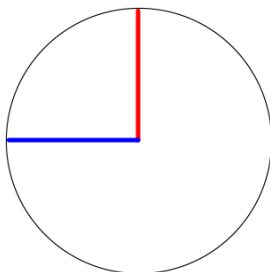
To provide insight into how the entities with their electromagnetic manifestations have moved from the speed of light to the rate of zero, The Dutch Paradigm introduces a new concept, the Kinetic Rest Speed. The Kinetic Rest Speed is further explained in this chapter based on the book The Dutch Paradigm, chapter 46, pages 166-169.

All naked entities and constructs have a kinetic rest speed

That kinetic rest speed defines as the speed of propagation at which the entity or construct has no kinetic energy in its electromagnetic manifestations. It is the speed at which the entity or construct emerged.

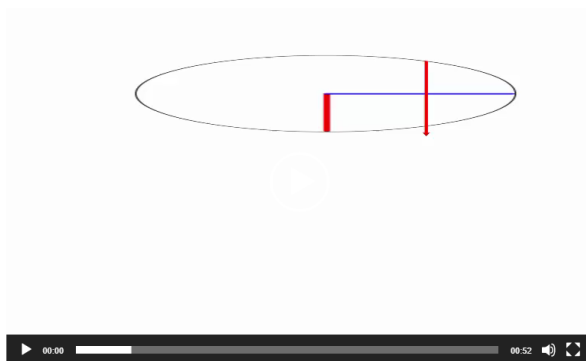
The definition refers to the concept of kinetic energy. The concept of inertia associated with kinetic energy is discussed in the following chapter.

For the photon and neutrino, this kinetic rest speed is the speed of light.



For the construct electron, this speed is significantly lower.

For clarification, the illustration of the naked electron is:



One of the postulates of The Dutch Paradigm is that the speed limit for any manifestation of an entity is the speed of light. In the electron, we have the electric manifestation of the photon active in the direction of propagation of the construct, and therefore, the speed of the electron is reduced to avoid breaching the limit of the speed of light. The reported speed of a naked electron is at some $2,2 \cdot 10^3$ km/s, or approx. **0,01** times the speed of light.

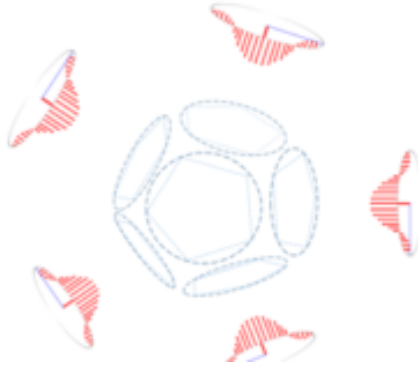
For the electron, values are known for “mass” (= free magnetic quant) and a value for the propagation speed in a vacuum. The “mass” is difficult to measure, but it is assumed to be a constant of nature. The Dutch Paradigm clarified that there is an alignment between the new, slowed propagation speed and the frequency of the electromagnetic system of the electron. Both are variable and related to each other. Therefore, it is not (yet) possible to state precisely the kinetic rest speed of an electron. What is certain is that the "mass" of an electron is not a constant of nature.

A check reveals that the amplitude of the electric manifestation at **0,34 fm** alternating at a frequency of **1,54.10²³ Hz** is already in itself active at almost the speed of light. In the electron, the electric manifestation of the photon is rotating into the direction of propagation. Therefore, the reported speed of the naked electron at $2,2 \cdot 10^3$ km/s is well understood.

While forming the electron, there is no other interference, and therefore, this speed of $2,2 \cdot 10^3$ km/s is the kinetic rest speed of the electron.

For the time being, the known and generally accepted values have been assumed as kinetic rest speed, with the frequency of the electromagnetic system to be calculated. The determining factor is that no kinetic energy is accumulated into the construct at the kinetic rest speed.

The rest speed for the dodecahedron is zero relative to the speed of light.



After the formation of the dodecahedron, the 12 electrons are fixed in a constructive spatial relationship. Relative to the speed of light, the kinetic resting speed associated with the dodecahedron is $0c$. The dodecahedron entities that started at the speed of light $1c$ are now at a rate of $0c$. However, the electromagnetic manifestations in the dodecahedron, like the amplitude of the photon, still run at the speed of light. Thus, the two extremes are present in the same construct. We experience a speed $0c$ externally and $1c$ internally.

The definition of the kinetic rest speed is:

The speed of propagation at which the entity or construct has no kinetic energy in its electromagnetic manifestations. It is the speed at which the entity or construct emerged.

Whenever through external interference a construct change speed, it reacts to avoid breaching with one or more of the manifestations of the constituent entities by introducing vibrational compensation. During the acceleration, the construct builds up those vibrations and therefore show inertial behavior.

Without further acceleration, the vibrational compensation continuous as is the new stable situation for the construct.

Once accelerated as a construct, kinetic energy builds up. That process reflects the inertial behavior of constructs.

The next chapter will further explain the accumulation of kinetic energy in constructs.

27. INERTIA

The origin of “mass” is a mystery to the prevailing paradigm. The idea of mass is central to Isaac Newton's laws. These physical laws predict the behavior of mass in our daily life. We derive from it the attraction by gravity, but also the law that indicates how a force can accelerate a mass.

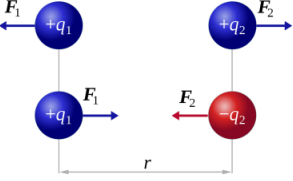


The Dutch Paradigm gives a solid explanation and validation of the phenomena that induce the behavior referred to as mass.

The electron's construct necessitates a reduction of the free electrical quanta frequency working within the electron. The corresponding part of the free electric quanta's energy, Δhf , is thereby converted to the free magnetic quanta.

According to Coulomb's law, the free electric quanta are mutually repellant, while the free magnetic quanta are mutually attractive.

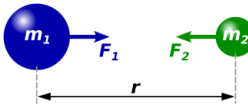
Coulomb's Law:



$$|F_1| = |F_2| = k_e \frac{|q_1 \times q_2|}{r^2}$$

Ref.: Dna: -Dennis, CC BY 3.0,

Newton's Law:



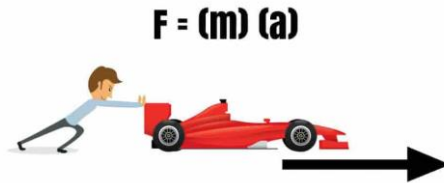
$$F_1 = F_2 = G \frac{m_1 \times m_2}{r^2}$$

Ref.: Dna: -Dennis

The energy conversion effect from free electric quanta to free magnetic quanta is in the prevailing paradigm defined according to Einstein's Law $E=mc^2$. The origin of such energy conversion is unknown because the electron is still supposed to be an elementary particle, and the notion of a free magnetic quant is not yet recognized.

We again see the idea of mass in Newton's law, in which he states that the force needed to speed up a mass **m** is equal to **F=ma**

This law indicates that a mass is resistant to any change in speed.



Where can the basis for inertia be found in the models of the Dutch Paradigm?

What happens when we accelerate and slow down an electron?

Such accelerating and slowing down electrons is what we do every day when we “generate” and “use” electricity for propulsion. Electrons in a current carrier are guided through a magnetic field of different qualities and accelerate or slow down by induced the Lorentz force's excitation. A change in each electron's propagation speed causes the free electrical quants frequency to readjust to stay at the speed of light. Not lower, not higher.

It is essentially how the electron processes kinetic energy in its construct. This process is by storing kinetic energy during generation and kinetic energy release by electrical power consumption. The Lorentz forces can convert the energy from and to mechanical power.

This explanation derives from the electron model defined by The Dutch Paradigm as well, but unknown with regular science.

What happens when dodecahedrons speed up and slow down?

We do such accelerating and slowing down of electrons every day when we “generate” and “use” electricity for propulsion. Electrons in a current carrier are conducted through a magnetic field of different qualities and

accelerate or slow down due to the Lorentz force's action. A change in each electron's propagation speed causes the frequency of the free electric quanta to be readjusted to maintain the speed of light. Not faster, but also not slower than the speed of light.

It is essential to understand how the electron processes kinetic energy in its construction. This process takes place by storing kinetic energy while generating and releasing kinetic energy through electrical power consumption. The Lorentz forces can convert the energy to and from mechanical force.

This explanation is derived from the electron model as defined by The Dutch Paradigm, but this model is not yet known to mainstream science.

What happens when dodecahedrons speed up and slow down?

Dodecahedra are made up of 12 electrons each. These electrons are locked in the spatial construction of the dodecahedron. Lorentz forces are also here exerted on the electrons' free electrical quanta, not from the outside but due to the construct from within, from interference with neighboring electrons. The Lorentz force glues all the electrons in the dodecahedron together. So the force is available, but the electrons do not have the spatial freedom to adjust the individual propagation speed.

Nevertheless, constructs made of dodecahedrons can successfully accelerate and decelerate through the exertion of force. The dodecahedrons must adjust from within to keep and not exceed the free electric quanta manifestations at the speed of light. This adaptation behavior requires energy exchange. It is known as the "inertia" behavior of an object.

This is briefly discussed in the book The Dutch Paradigm chapter 46. Some further explanation is given here.

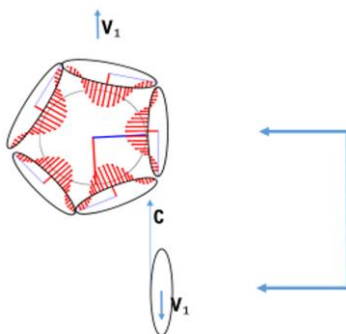
Once the constituents are spatially locked in a construct, a different scenario becomes active to avoid over-speeding whenever that construct accelerates. Acceleration is building up

the speed of the construct in one direction only. The reaction within the construct is vibration to compensate for the potential breach. The final compensational vibration within the construct is direction sensitive.

Whenever a dodecahedron has to process a change in speed, the need arises to modify the construct's dynamics to the new situation. Each enforced change in speed requires a specific adjustment of the electron's behavior on each of the dodecahedron's twelve faces. This behavior applies to an enforced change in the movement of the construct in both translating and rotating senses.

Suppose the dodecahedron is not under acceleration anymore. In that case, the reaction per side of the dodecahedron will finalize as per the last adaption in dynamics. The modification in the exogenous speed of the construct is mono-directional and/or mono-rotational. The endogenous electrons' electromagnetic system will dynamically be adjusted to the new compounded speed as perceived by an electron per side of the dodecahedron.

A simple illustration is for the dodecahedron:



Whenever the dodecahedron, as part of a twin-dodecahedron, accelerates to a speed V , then all 12 electrons get vibrational compensation specific per face. It reflects the direction and value of the speed V . Whenever the dodecahedron rotates, the electrons adjust vibrational to the local spatial requirements. The direction and velocity of the speed within the construct are therefore conserved.

These vibrational responses are within the construct and preserve the history of acceleration of the construct, irrespective of the complexity of the construct.

Because the electrons are spatially locked in the dodecahedron, the adjustments to an electron's parameters must occur within each electron's spatial perimeter. The acceleration is mono-directional and/or mono-rotational. Each electron must adjust relative to its position versus the direction of the acceleration.

The position of the electron relative to the acceleration in the speed of propagation of the dodecahedron may vary.

The dodecahedrons in an atomic structure rotate in a complex pattern, and consequently, all 12 electrons are in a dynamically changing position versus the direction of propagation of the atom. The adjustments per electron are equal dynamic.

Even when a dodecahedron is propagating at a constant speed, the aforementioned adjustment process remains internally active. The energy incorporated in the dodecahedron to sustain the adjustment process is the preserved kinetic energy.

Every approximately 10^{14} Hz, the dodecahedron oscillates as well and changes specifically the lateral direction of the electrical component.

It is all *Panta rhei* at gamma frequency.

When we consider this within terms of references that we as humans are accustomed to, it looks very complicated for the electrons to adapt to the apparent constantly changing conditions, even at a constant speed. Although I will not suggest that this is not complicated, we must consider this within the scope and perspective that the adaptations are made on an electromagnetic system at a frequency of 10^{23} Hz, at the speed of light, and periodically adjusted per Planck period of 10^{-44} sec. It is the human being that needs an enormous number of iterations for our actions within our environment. We are slow on a cosmic scale, and also, our impact on the speed of objects is low.

In short, it is a wonderfully complicated game of influences in frequency and speed. When we observe an object at rest, it is hard to imagine what dynamics are active within the object.

At any time, the impact of the compounded history of accelerations within the dodecahedron is reversible. At whatever forced deceleration, the reverse reaction is perfectly able to release energy accordingly. It is the behavior that is known as the inertia reaction of "mass."

Obviously, with so much agitation of the electrons in the dodecahedrons, it is a blessing that they are extremely well bond together, anchored in the dodecahedron's spatial structure. The construct of the dodecahedron and the constituent gamma photons and gamma neutrinos resist just about everything that comes towards them in acceleration, imprint the adaptations in their dynamic reaction patterns, and still allow for an enforced reversal to the world outside its own envelope. It can be well understood in principle, but it is amazing in its logic in processing. A proton even can withstand the acceleration in the Large Hadron Collider, in which the electromagnetic manifestations have to respond to a speed close to the speed of light.

In the book *The Dutch Paradigm*, I give a brief description of how we relatively experience this acceleration and deceleration game.

An observer propagating through space at the same speed alongside such a construct is not aware of such a build-up of energy in system inertia. Also, such an observer can accelerate the construct, and subsequently the system adjusts to the induced new situation through a rearrangement of the inertial reaction. The observer perceives that as an absolute inertial reaction of the construct, while in fact, it is relative.

The consequence of this postulate is that the planet Earth has in all its constituent twin-dodecahedrons the history preserved of its journey through space and time in a single directional speed vector.

It is quite conceivable to make a computer simulation for the dodecahedron system of how vibrations will arise due to the acceleration of a dodecahedron with its 12 electrons.

The system of ongoing dynamics in timely adaptations of frequency has little to do with accelerating and slowing down “mass” as identified in the prevailing paradigm. It reflects the frequency adaption of the free electric quants of the electron under ever-changing conditions.

The Dutch Paradigm models allow for a deeper understanding of the dynamics of the electron in the various conditions. Naked, in the dodecahedron and atomic structure.

It is new territory, open now for further exploration of dynamic behavior.

