

## The Errors in the Foundation of the “Standard Model” theory and the “New Model”

Vaggelis Talios\*

Dipl. Mechanical and Electrician Engineer, National Technical University of Athens (NTUA)  
E/M Projects Designer and Contractor Engineer, Greece

**\*Corresponding Author**

Vaggelis Talios, Dipl. Mechanical and Electrician Engineer, National Technical University of Athens (NTUA), Greece.

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**Abstract**

*In Physics, when various theories have disputed points, they are temporarily established, until their disputed points are clarified. If the disputed points of the theories are not clarified, the theories are rejected, if they are clarified and no new disputed points arise, the theories are definitively established. A theory may also be established definitively even when its disputed points are of secondary importance. However, in general, an established theory is always in question, since with the progress of science, new data may emerge that will question the correctness of the theory.*

*Thus the theory of the Standard Model, which is a branch of the theory of Quanta and describes the elementary structural components of matter; the strong, weak and electromagnetic interactions between them and the Higgs mechanism for the origin of the mass of elementary particles, been established as a very well-founded theory, according to the proponents of the theory, which has predicted many experimental results and the existence of many particles and has withstood many theoretical and experimental tests. But because the theory also has many disputed points, as I describe in papers [1, 2], it was temporarily established until the clarification of its disputed points.*

*In this paper I describe some errors of the Standard Model theory, created during the foundation of the theory which burden the theory even more, since it is very negative to establish a theory on a false foundation. In any way to supplement or replace the gap that may leave the theory of the Standard Model, which I believe, sooner or later, but at some point of time, due to the disputed points and the errors of its foundation, will be withdrawn, I propose a New Model, which most convincingly describes the elementary building blocks of matter, antimatter and their interactions. The New Model also addresses all the weak points of the Standard Model theory, how the mass of subnuclear particles is created, and includes gravity, which is not included in the Standard Model theory.*

**1. Introduction**

Therefore, in addition to the incorrect predictions of the Standard Model theory, which we examined in the papers [1, 2], which we mention above, the theory is also based on incorrect foundation, as I describe in the after next section, which leads us to the conclusion that the theory, or must be changed, or radically renewed, or rejected since it is not possible to base a theory on false foundation.

At this point I want to clarify that the paper concerns only the theory of the Standard Model and has nothing to do with the theory of Quanta which I personally believe is a very well study, founded and successful theory. Simply the branch of the theory of Quanta, namely the theory of the Standard Model, which arose after the discovery that protons and neutrons are divisible particles and are made of triplets of particles, the up and down quarks and the false assumption that the up and down quarks and the electron are elementary particles, is a wrong theory.

If we examine the case from the beginning, we will notice that one of the most important issues that has always occupied scientists and still occupies them to-day, is to discover the elementary particles of matter and antimatter and the fundamental interactions between them. How these particles were created and how from these particles the fundamental interactions and the rest of the subnuclear and subatomic particles, nuclei, atoms, masses, antimasses and material bodies were subsequently created.

The first to deal with matter were Aristotle (384-322 BC) and Democritus (460-370 BC). According to Aristotle, matter is continuous. That is, we could divide a piece of matter into small pieces, without any limit. In this sense there is a continuous division of matter, meaning that we will never meet a piece of matter that we cannot divide into smaller pieces. On the other hand, Democritus argued the opposite. That is to say that matter by its nature is granular and that every material body consists of a very large number of different atoms. In this case, with the word

"atom" Democritus characterized exactly the last subdivision of matter, which after this subdivision, matter could no longer be divided further more.

The research and debates on the different views of Aristotle and Democritus lasted for many centuries, without either side being able to present any theoretical or experimental evidence to confirm the correctness of their views. This lasted until 1803, when the famous British Physicist Dalton (1766-1844 AD), trying to explain the phenomenon of the constant ratio of elements in various chemical reactions, formulated the idea that this phenomenon is due to the fact that matter consists of small particles which he called "atoms", using the same name that Democritus had used twenty centuries earlier.

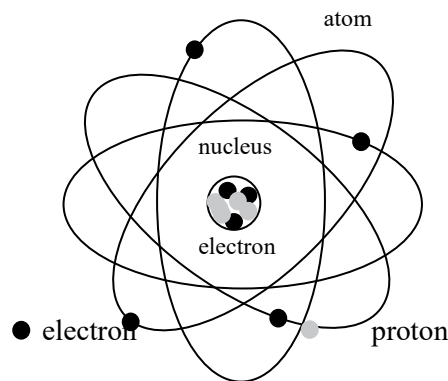
The above dispute between the views of Aristotle and Democritus, as supplemented by Dalton, continued for another century and until 1905, when Einstein (1879-1955 AD) made a very important observation, regarding with the existence of the atoms. Einstein's observation was that, within a liquid, or within a gas, there is a random continuous movement of various microparticles of dust. This movement, (to which Physics has given the name of the scientist who observed it, calling it "Brownian motion"), as a natural phenomenon, could only be explained by the movement of "atoms" in the liquid, or in the gas and their collision with dust particles. Thus, with Dalton's observations, on the phenomenon of the constant ratio of elements in the various chemical reactions, and then by Einstein on the "Brownian motion", the experimental proof was now given that matter is made up of various small particles, the "atoms", which were initially also considered as elementary particles, i.e. as the last subdivisions of matter.

## 1.1 The Elementary Particles

It seems, however, that Nature has a peculiar and very cautious and slow pace, with which she reveals her secrets to man, obliging him to always be in constant investigation and search. Thus, even after the discovery of the atoms, new questions began to arise about what atoms are, what they are made of and how they were created.

At that time, around 1910, after the experimental proof of the existence of the atoms, there were already suspicions that atoms in turn must not be elementary particles, but must also consist of other smaller elements of matter. Already, certain particles known today as "electrons", with a negative electrical charge, whose mass was much lower (about one to two thousand times) than the mass of the Hydrogen atom, had already been identified experimentally. Thus the detection of the electrons led scientists to the indisputable conclusion that there were other smaller subdivisions of matter after the atoms and therefore its division did not stop at the atoms but continued even further. Thus the Quanta theory of atoms and subatomic particles slowly began to be established.

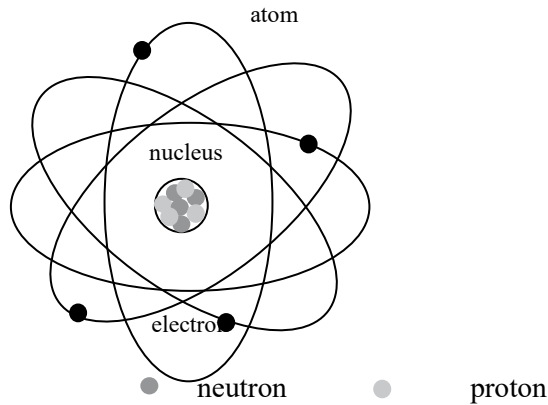
In 1911, the British physicist Rutherford (1871-1937AD) proved experimentally that atoms are subdivided into smaller particles, specifically that they consist of a positively charged nucleus around which electrons revolve, negatively charged particles that already had been discovered. The nuclei of atoms were then considered to be composed of electrons and protons, where protons were particles like electrons but with a positive electric charge, and they got this name because they were considered to be, together with electrons, the elementary particles and the fundamental units of matter. Thus, the form of the atom was formed as shown in figure 1 below.



**Figure 1:** The Figure of the Atom after the Discovery of the Proton.

This model of the atom's structure with a solid nucleus and the electrons orbiting around the nucleus lasted only about 20 years, until 1932, when James Chadwick (1891-1974 AD) discovered that, in turn, the nucleus of the atom does not consist of electrons and protons, but that it is composed of two different particles, with the following difference. One of these particles was indeed the "proton" particle which, as described above, had already been discovered, but the other particle was not the electron but was a neutral, new with "no charge" particle, with a mass

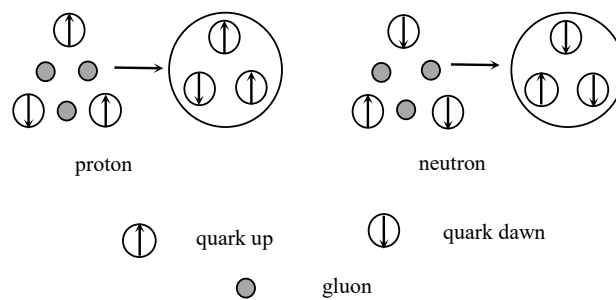
approximately equal to the mass of the proton which, because it was a neutral particle, was given the name "neutron". So the new image of the atom at that time was formed as shown in figure 2, that is: from a nucleus, which consisted of a set of protons and neutrons, -which make up the solid part of the atom-, around which were revolved the electrons. For the cohesion and bonding of protons and neutrons inside the nucleus, a new particle was established that physicists called the gluon.



**Figure 2:** The Figure of the Atom after the Discovery of the Neutron.

With the discovery of the electron, proton, and neutron, scientists thought that the search for the structure and the origin of matter was now over. In fact, some scientists hastened to declare that in a very short time the research of the structure of the microcosm will be completed. But once again the scientists were disproved since some thirty years ago in some experiments done by the physicist Myrray Gell-Mann (1929-2019 AD) at the California Institute of Technology, in which high-speed protons collided

with other protons, it was shown that protons and neutrons were not elementary particles. In particular, it was shown that protons and neutrons are complex particles and that they consist of triads of other particles, the “quarks” up and dawn, as shown in figure 3. The connecting link that joined the quarks together to create the protons and neutrons was considered the gluon boson which had also been discovered and bound together the protons and neutrons of the nucleus.



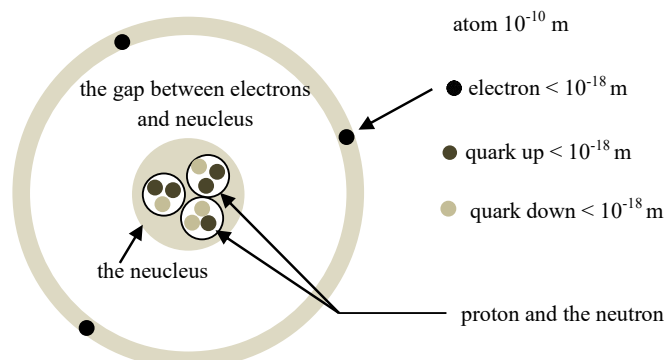
**Figure 3:** The Formation of the Proton and the Neutron from Quarks And Gluons

Several other variants of quarks have been identified such as quarks, “paradox”, “top”, “bottom”, quarks “colours” with variants “red”, “green”, “blue” etc. But of all the variants of quarks we will distinguish and examine the case of the “up” quarks and the “down” quarks which are the particles from which the nucleons were formed, i.e. the particles of the nuclei, i.e. protons and neutrons.

combinations from which quarks created protons and neutrons are: Two up quarks and one down quark created a proton. And two down quarks and one up quark created a neutron. How these combinations were made is shown in figure 3 above.

The main characteristic size of the above two particles, “up” quark and “down” quark, relevant to this work is their charge. And the “up” quark has a charge of +2/3 of the charge of the proton, and the “dawn” quark -1/3 of the charge of the proton. The

With the discovery of the up and down quarks, which together with the electron were thought to constitute the elementary particles, a new theory began to take shape as an offshoot of the theory of Quanta, the theory of the Standard Model, which would include and studied all the evolution after the discovery of quarks.



**Figure 4:** The Form of the Atom as of Today.

The picture of the structure of the atom after the discovery of the quarks took the form which is still valid to this day as shown in figure 4. In figure 4, the dimensions of the subatomic and subnuclear particles are also marked as these dimensions have been determined, from experiments and from theoretical calculations. These dimensions lead us to a better understanding of the size and structure of the atom and the subatomic particles.

### 1.2 The Errors in the Foundation of the Theory of the Standard Model

At this point, nature once again tricked scientists and made them believe wrongly, that the up and down quarks and the electron are elementary particles, which is still believed today, when there are clear indications that these are composite particles. The indications are that there are charge subdivisions, the down quarks and their antiparticles have charges of  $-1/3e$  and  $+1/3e$ , which are smaller than the charges of the electron and the up quark, which leads us to the conclusion that the electron and the up quark are composite particles. In the course of the research, it will be proven that the down quark is also a composite particle.

But nature was not content with fooling scientists into believing that the up and down quarks and the electron are elementary particles, but also led them to a second false conclusion that the up and down quarks are stationary inside the nucleus of the atom when in fact, all subatomic and subnuclear particles, except the proton and neutron, from the beginning of their creation move, with speeds proportional to the speed of electromagnetic waves, either freely or in rotational orbits around their oppositely charged particles to form the next generations of particles.

Apart from the weak points that I described in the papers [1, 2] and the errors in the foundation of the Standard Model theory, which essentially reject the theory, another very weak point of the theory is that: there are many other more worthy proposals for the renewal or replacement of the theory, which, however, for unknown reasons are rejected, without being studied or taken into account. Among these proposals, is the New Model that I describe below for the origin of the structural components of matter and the strong, weak and electromagnetic interactions between them, which includes the interaction of gravity and describes with greater clarity, simplicity and reliability, the

origin of the structural components of matter and the interactions between them. The New Model that I propose is fully adapted to all the theoretical and experimental data of science up to date. It also describes the mechanism of the residue  $dF_g$  for the origin of gravity and the subatomic particles masses, for replacing the Higgs mechanism.

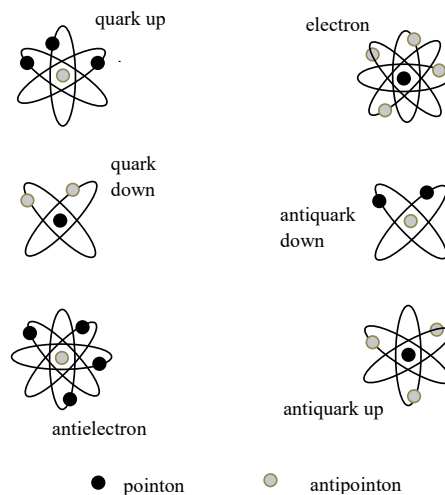
### 1.3 A New Model for the Subatomic Particles and Fundamental Interactions. The New Model also Includes the Interaction of Gravity

So according to the New Model:

***“Everything in the Cosmos was created from two particles, the Pointon and the Antipointon and from a single interaction, the Electromagnetic Interaction!”***

The electromagnetic interaction is created along with the creation of the pointons and antipointons, like an attraction or repulsion, between these particles without the need for the mediation of a boson (the  $\gamma$  photon) to create this attraction or repulsion. With the creation of the initial pointons and antipointons, a lightning-fast chain reaction of production of pointons and antipointons began, which continues to produce pointons and antipointons to this day at the limits of the Cosmos. The particles produced by the chain reaction are elementary particles, the smallest subdivisions of matter and antimatter. They are simply,  $+1/3e$  and  $-1/3e$ , charges, massless, with inertial, and have almost zero dimensions (diameter  $<10^{-30}m$ ).

With the help of the electromagnetic interaction, the pointons and antipointons are attracted to each other, and: a) or collide and destroy each other, b) or move freely at speeds proportional to the speed of electromagnetic waves or light, c) or enter into rotational orbits around their opposite particles. In the third case, they create the next generation of particles, namely: the up and down quarks, the electron and their antiparticles, as shown in figure 5. The new particles are particles with mass, (which is created without needing the Higgs mechanism) and dimensions. Figure 5 shows also the structure and the divisibility of the up and down quarks, the electron and their antiparticles.

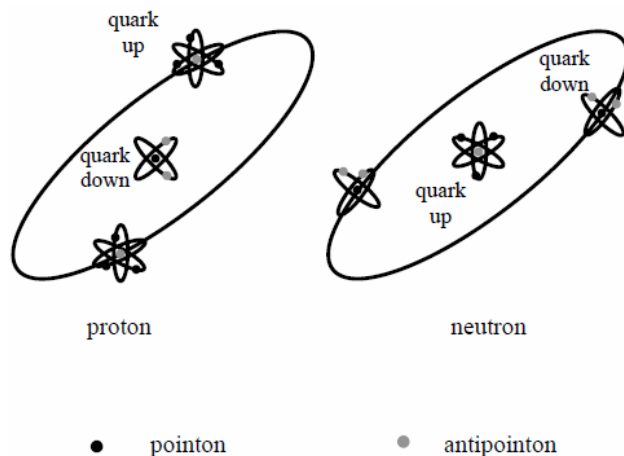


**Figure 5:** The Combinations of Pointons and Antipointons That Formed the Up and Down Quarks the Electron and Their Antiparticles

Then, without needing any other interaction, from the up and down quarks and with the help again of the spin orbits and the electromagnetic interaction, (without needing the g gluons, accepted by the Standard Model theory), they are created protons and neutrons as shown in figure 6, which replaces figure 3 on page 3 of the Standard Model. Together with protons and neutrons, the first primary gradation of the electromagnetic interaction is created, the strong nuclear interaction, (again without the need of gluons g), which contributed and contributes to the creation of the nuclei of the Helium and then the nuclei of the rest atoms. Hydrogen nuclei had already been created since

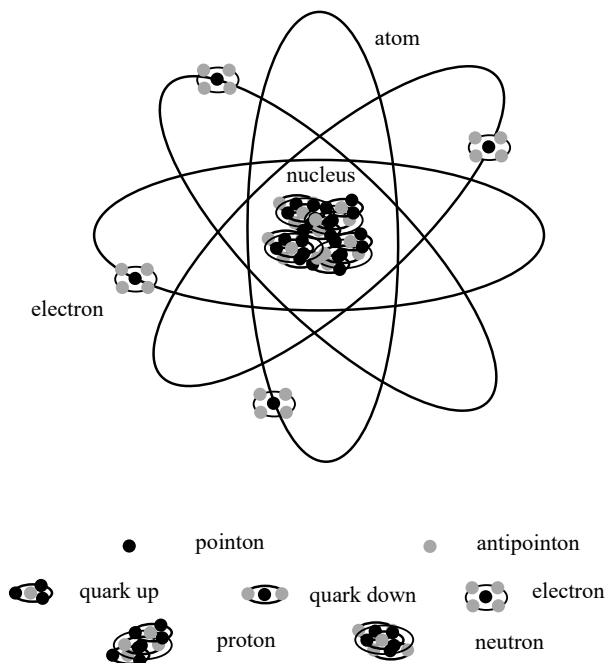
they consist of simple protons.

From the nuclei of Hydrogen and the Helium and the electrons, by the known mechanisms we all know, the atoms of Hydrogen and the Helium were created, without needing any other interaction. However, together with the creation of the atoms of Hydrogen and the Helium, the second primary gradation of electromagnetic interaction the interaction of gravity was created, (without needing the graviton bosons), which contributed and contributes to the creation of molecules, matter and antimatter and then directs all the creation and the functioning of the Cosmos.



**Figure 6:** The Suggested Indicative Structures of Proton and Neutron.

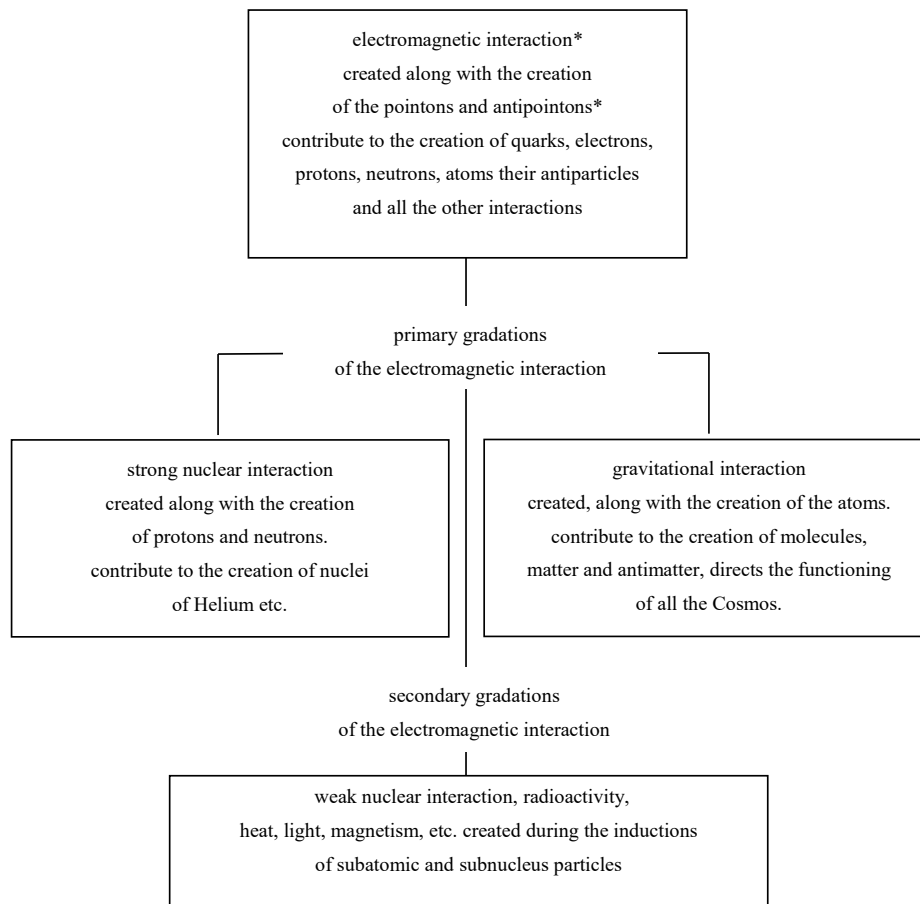
The final structure of the atom took the figure 7 below and proposed to replace figure 4, page 3 of the structure of the atom that is valid today:



**Figure 7:** The Structure of the Atom According to the Theory of the Chain Reaction and the New Model.

The remaining interactions, namely: The *weak nuclear interaction*, the radiation, the heat, the light, the magnetism, etc. are created during the inductions of the subatomic and

subnuclear particles and are characterized by the New Model as secondary gradations of the electromagnetic interaction.



**Figure 8:** The Classification of the Subatomic Particles and the Fundamental Interactions According to the Theory of the Chain Reaction

**Note:** \*According to the New Model, the elementary components of matter and antimatter as well as all interactions are limited to the two particles *pointon* and the *antipointon* and the *electromagnetic interaction*. !

Figure 8, above summarizes the entire process above. But I have the feeling that I have tired you enough with my pointons and antipointons, the chain reaction theory, the gradiations of the electromagnetic interaction, etc. This is why I am closing the paper, leaving the rest of the details for the readers, who want to go deeper and to study more the subject of particles and interactions, find and study them, in my books, references [3, 4]. As you will notice the only elements needed to describe the New Model are the two elementary particles pointons and antipointons, the electromagnetic interaction and the chain reaction of producing the pointons and antipointons. No particle accelerators, a bit of right thinking, and nothing more. !

## 2. Judgments, Conclusions and Proposals

With the discovery of up and down quarks, which together with the electron were considered to be elementary particles of matter, scientists established a new theory of elementary particles and fundamental interactions, the Standard Model theory. But despite the auspicious prospects of the theory, the theory in details also presents many weak points, with the main weak point being the errors in the foundation of the theory as we described above. This means that science: either has to revise the existing data of the theory, which is probably impossible to happen, or readjust the Standard Model to agree with the existing data, or reject it.

Unfortunately, however, the proponents of the Standard Model theory, who also represent the established views of science, oppose the revision of the theory, or make wrong choices in their attempt to readjust its data, with the result that the situation is even more confused [5,6]. At the same time, they reject, for unknown reasons, all the new proposals, which come from independent researchers, but are different from their views, such as for example the New Model that I propose above.

But I believe and have absolute certainty that, with the temporary establishment of the New Model, all the weak points of the theory of the Standard Model would be clarified and new paths would be opened in the development of the Physics of subatomic particles and fundamental interactions. This is the reason why I propose that the theory of the New Model should be studied very carefully, be asked its author for any clarifications and then the establishment or the rejection of the theory should be decided. That is, not to de facto be rejected the theory as it is customary for the opinions of independent researchers.

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