Are ATP Synthase and Black Holes Scientific Illusions?
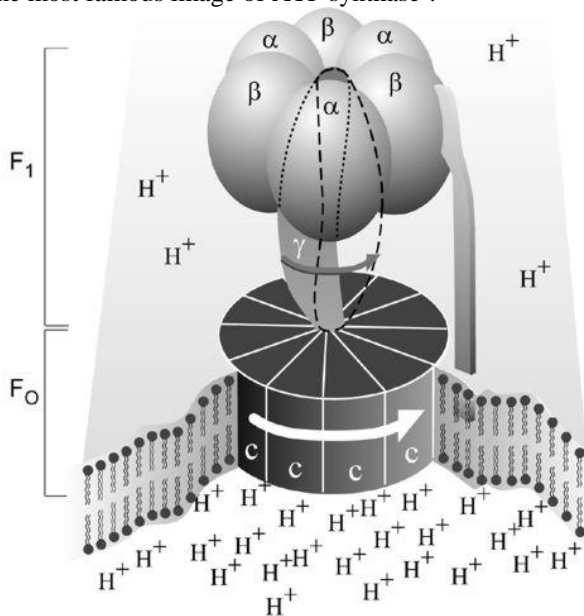
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In this paper I explore the ideas behind the scientific explanations for both ATP synthase and Black Holes, as well as give an alternative interpretation.

A scientist, like any man, can only observe a small part of reality, even by using a microscope or a telescope. Beyond a certain size of nanometre or of lightyears our apparatus and senses cannot help us to see *how reality behaves*.

We can still be inspired by the allegory ofPlato´s cave: what we see may be shadows of the reality, but not the reality itself. Even though science has shown that phenomena such as Black Holes and ATP synthase are true subjects, existing in reality, and science has shown how they behave, no one has ever seen them directly. It is indeed indirect proofs and equations, and this can be the phenomenon of Plato´s cave. Furthermore, indirect proofs cannot handle the behaviour of reality; they are at the best fixed images.

The most famous image of ATP synthase[1]:

The image of a Black Hole has often been shown like this[2]:

The questions I want to raise are these:
1) Does ATP synthase actually exist?
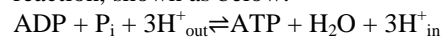2) Do Black Holesactually exist?
Are they both based on optical illusions and invalid equations?[3]

Are they both created by the worldview of contemporary science, and will thatworldview be overcome by new discoveries in the future?

But before answering these questions, we will have to observe how Black Holes and ATP synthase are explained in the contemporary scientific theories:

1) **The function of ATP synthase is to produce ATP, adenosine triphosphate, which is an organic compound, i.e. ATP contains carbon-hydrogen bonds.**
Contemporaryscience views ATP synthase as a catalysed reaction, shown as below:
$ADP + P_i + 3H^+_{out} \rightleftharpoons ATP + H_2O + 3H^+_{in}$
ADP consists of $C_{10}H_{15}N_5O_{10}P_2$ and ATP consistsof $C_{10}H_{16}N_5O_{13}P_3$.

The reversible reaction, i.e. $\rightleftharpoons$, means equilibrium, i.e. balance and no net change between the components, as explained by the constant K_{eq}.

$K_{eq}$is the equilibrium constant expressing the ratio of products and reactants at equilibrium.

The meaning is that if a system is not at equilibrium, the system itself will direct moves towards equilibrium. **However**, I want to challenge this notion.

2) **The most common equation of Black Holes is this[4]:**
$$r = 2Gm/c^2$$

G is the gravitational constant, **c** is the speed of light, **m** is the mass of the black hole and **r** is the Schwarzschild radius. This equation is derived from Einstein´s equation for general relativity:

In the cases both of Black Holes and of ATP synthase, theseequations and their images reflect each other, i.e. the image is a mirror of the formula. Is it possible that these mirrors are illusions and that we only see what our minds are programmed to see?

An alternative interpretation

The Theory of Relations[5], an alternative theory, claims that in physical reality continuous flows of packages move in "tubes" between all systems, resulting in gravitation, force, energy and the transport of molecules in the cell. These flows contain all mass in the Universe, including black holes, dark matter and dark energy.

If we now, before going further in detailed studies of these equations and images, introduce some new concepts for understanding physical reality, we might have an alternative view of understanding these twophenomena.

Here we can ask Einstein´s question of completeness[6]:
1) "Is the description given by the theory complete?"
2) "Every element of the physical reality must have a counterpart in the physical theory."

Complementary to these two questions, we introduce the following requirement:
3) Every concept has to represent the physical reality directly and concretely.5

Now, comparing the established logic from the formulas and the images above, with the logic and image of the principle of relations[4], what do we find?

The new concept *relation* is based on this postulate:
Nothing exists in isolation, i.e. everything exists in relations.

The postulate is valid for all things and all beings, even at the most fundamental level, before we even think of science and humans; it is valid for scientific objects as well as for human sciences.

Based on the postulate, the fundamental concepts and the fundamental equations behind the laws of relations are the following:

The concept relationrelates to reality by showing that there are relations between all parts in the Universe, where:
1) **a, b, c** … are any system, subsystem, unit or part in any field of the Universe, e.g. suns, planets, moons, galaxies, quarks, leptons, hadrons, mesons, baryons, nuclei, atoms, cells and molecules.
2) The relation **R** is a flow (wave) of packages, p_{1-n}, between a, b, c … in any field of the Universe.

Basedonthepostulate - nothing exists in isolation, i.e. everything exists in relations –in combination with 1and 2 above,the principle is

$$X = aRb$$

The principle of relations claims that between all systems and between all parts of any system, S, there is a continuous flow of packages p_{1-n}, i.e. in aRb, $R = p_{1-n}$, and the formula is

$$S = ap_{1-n}b$$

S is a complex of relations between all parts and elements in the system, i.e. the a, b, and c are complicated systems, which send and/or receive flows of packages, i.e. p_{1-n}

$$R = \sum p_{1-n} = p_1 + p_2 + p_3 \dots p_n$$

The big challenge is now to identify all the *p* in all relations and to identify, certainly and concretely, the logic of

$$S_1 = (a_1R_1b_1)R_2(a_2R_3b_2) \dots$$

The Principle of Relationsis based on these statements:
1. There cannot be any fixed atomic facts and elementary propositions.
2. There are no values which are true or false, but only true or false at a certain point of time.

An alternative interpretation of ATP synthase

Based on the principle of relations, the logic of ATP synthase is not valid, since the concepts "conjunction", "disjunction", "negation" and "implication", in combination with truth function and the statements of fixed atomic facts and elementary propositions, tell us that there are no values which are true or false, except at a certain point of time. Then the reversible reaction, $\rightleftharpoons$, is not valid and equilibrium does not exist.

Then, when we apply the logic of aRb to our understanding of ATP synthase, the conclusion is different:
1) There are flows of packages in one direction only, e.g. flows of packages are transported into our cells.
2) Equilibrium does not exist in nature.
3) The symbol $\rightleftharpoons$ and its meaning of "reversible" reaction is not valid.
4) Carbon-hydrogen bonds do not exist, since it is packages of flows that fulfil the task.

Flows of packages through the body are enabled by the blood pressure securing continuous flows throughout the body.

The circulatory system manages the flow of packages, consisting of blood with its contents of nutrients, such as amino acids and oxygen, waste and carbon-dioxide, which are all transported by vessels.

As it seems,*the blood-pressure is enough* to fulfil the function of supplying the cells and mitochondria with what is needed and then to clean up and transport the waste. This happens in a continuous performance.

Then, is the ATP synthase, the so-called molecular machine, an illusion? Where can we see this "Nano machine"? Are there any photos of this phenomenon? Is it only an image made by man? As it seems, it is only an image made by man.
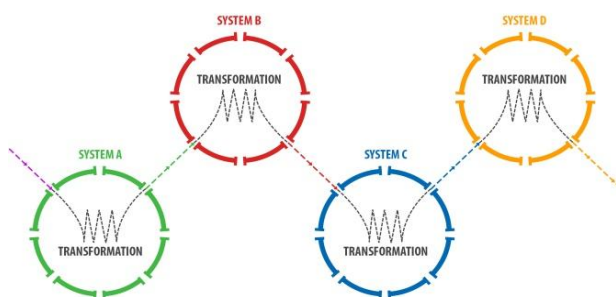
Based on the principle of relations both the image and the equation are illusions.

To further understand how the theory of relations impacts the ATP synthase we must find out all connections in the body and how all flows depend on each other.
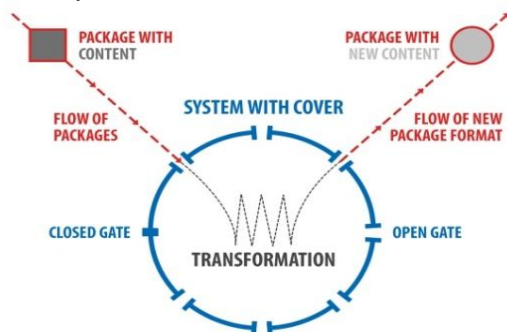
Based on $X = aRb$ and $S = ap_{1-n}b$, any system is and can be described as complex flows. We might call them wave functions, since a wave function is a flow of masses. It functions as a logistic system. Any (transportation-) system has the same logic. It contains instructions as to how masses are delivered. There are addresses, carriages, details of how the masses are to be loaded and unloaded, sizes of the masses, how the masses fit into different parts of the transport system, calls for masses, "doors" to the cover of a system, and a mechanism to open "doors". At all points of delivery the masses will change appearance. They will look different. They will be transformed.

Let us call the mechanism of transformation a *Transformer*. The Transformer transforms incoming packages, such as the molecule of carbonic acid CH_2O_3, the molecule of sugar $C_{12}H_{22}O_{11}$, the molecule of protein $C_9H_{11}NO_3$, the molecule of fat $C_{18}H_{34}O_2$ and the molecule of oxygen O_2.

The model below is an overview and conceptualisation of the role the Transformer plays both in the human body and in the Universe:

The gates are crucial and important, and they can schematically be shown as in this model:

Now, what will the Transformer look and how will it behave in order to transform packages?

The circulatory system manages the flow of packages, consisting of blood with contents of nutrients such as amino acids, oxygen, waste and carbon dioxide, which are all transported by vessels, ending in the cell.

The question to be asked now is whether the blood pressure itself is enough to fulfil the function of supplying the "end-stations" in the cell, e.g. mitochondria, and then move out the waste. Or does the cell need the molecular machine?

Based on the principle of relations the hypothesis is that there is only one specific pathway for every piece of mass, i.e. when any particle approaches the membrane of a cell, the cell´s structure will accept the one that fits.

This goes for every membrane, the outer and inner membranes for all cells, as well as for all levels of any system, e.g. the entire human body and any specific organ.

Then, as one consequence, the so-called "Brownian motor", based on the so-called "Brownian motion", does not exist and cannot do so, since randomness is impossible. If randomness, in terms of desultory and casual events, occurs, then the flow of packages will be damaged.

The same principle of flow appliesto all systems and all levels and all masses of reality, e.g. the Earth, the Universe, the human body, organs and the cell.

Now we are back to the phenomenon of the Transformer.

Since the concept *energy* is not valid, based on requirement 3, *ATP synthase is a Transformer.* It is not dealing with energy supply, but with the transformation of masses to fit in the next step in the flow.

The Transformer
A Transformer is*the mechanism which directs and leads packages*, e.g. protons, electrons and nutrient molecules, within the cells in the human body, as is to be shown in this section.

Throughout reality the same principle applies to the mechanisms of a Transformer´s functions, e.g. the Earth, the Sun, the Moon, the human body, galaxies, organs andcells in the Human Body.

Any system has covers. It can bejust one cover, but mostly there are many covers within the same system. One cover protects the next layer. There can be many layers in a system, e.g. the human body is entered via hands and mouth - stomach - small intestine – large intestine – kidney – liver – cell; it has its gate and its transformer – mitochondria – chromosome – DNA – gene – ATGC.

ATP synthase is one transformer which functions in membranes, i.e. the thylakoid membrane and the inner mitochondrial membrane.

Since ATP synthase is an enzyme protein, we can expect that all enzymes are transformers.

In the cover, e.g. cell membrane or the crust of the Earth, there are Transformers. Flows are *directed* via the Transformer into the systems and different subsystems, and so on for all systems and subsystems.

The equation $ADP + P_i + 3H^+_{out} \rightleftharpoons ATP + H_2O + 3H^+_{in}$ will now change, since it is an unusable and not valid equation.

Instead, we must find out the components in all chains of flows. Like a train with wagons, as our first imagination, proteins, carbohydrates and fats can show up like this; the commonest components and the most used are these:
… C – H – O – H – N – O – H – C – O – O – H …

Depending on the position and seating, the formula will show up in different shapes. The most common contents are the following:

1) The atoms C – H – O will be present in the flows of fats, e.g. for Cerotic acid $CH_3(CH_2)_{24}COOH$, and for the flows of Carbohydrates, e.g. Sugar $C_{12}H_{22}O_{11}$.
2) The atoms C – H – O – N will also be present in the flows of proteins, e.g. Insulin $C_{257}H_{383}N_{65}O_{77}S_6$, where S stands for Sulphur.

Based on aRb there are no bonds between atoms, there are flows of packages that push and pull the particles together.
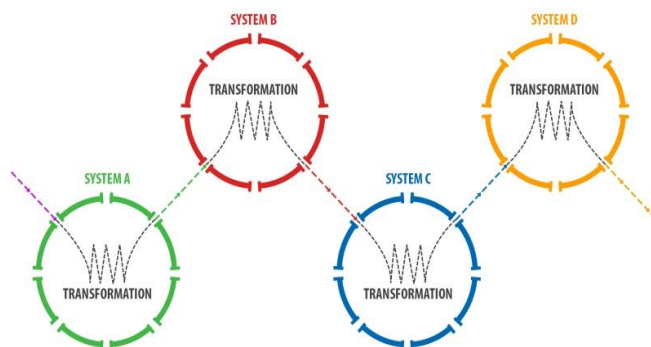
Then the formula will be
$S_1 = (a_1R_1b_1)R_2(a_2R_3b_2) \ldots$

S_1 is a complex of relations between all parts and elements in the system, i.e. a, b, and c are complicated subsystems, that send and/or receive flows of packages, i.e. p_{1-n}.

Then
$R = \sum p_{1-n} = p_1 + p_2 + p_3 \ldots p_n$

The big challenge is now to identify all the *p* in all relations and to identify, certainly and concretely, the logic of
$S_1 = (a_1R_1b_1)R_2(a_2R_3b_2) \ldots$

The equation for this may be illustrated as such:

The size and volume for any system regulate the flows in and out of any system. When packages leave any system, new packages can come in, i.e. they are needed.
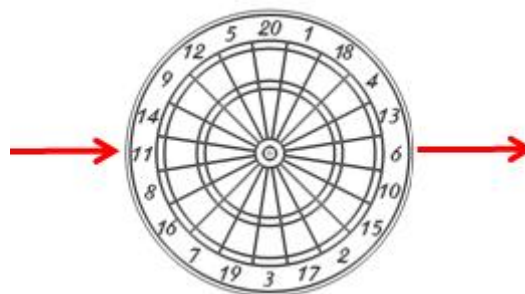
How, then, does the Transformer function?

Examining the entire idea of the ATP synthase being a molecular machine must be redone. Taking the Transformer in mind, the conception about ATP synthase may be the most misunderstood part in the human body. When using the concept and phenomenon of a 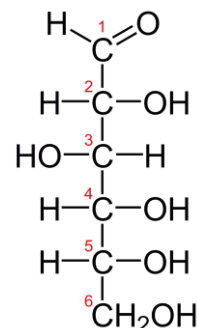Transformer the conclusion is different. In the following I will explore this path and establish the groundwork for seeing the ATP synthase in relation to the Transformer.

The cover of any system has a gate where the Transformer is located. When particles get close to the cell, only those particles that fit perfectlycan come in. The transformer can be seen as a paddle wheel, where each paddle can only accept and take one specific particle at a time. The paddle wheel, i.e. Transformer, takes in one package, particle, after another, e.g. O, H, N, P and C, and out comes a new molecule, e.g. ATP: $C_{10}H_{16}N_5O_{13}P_3$.

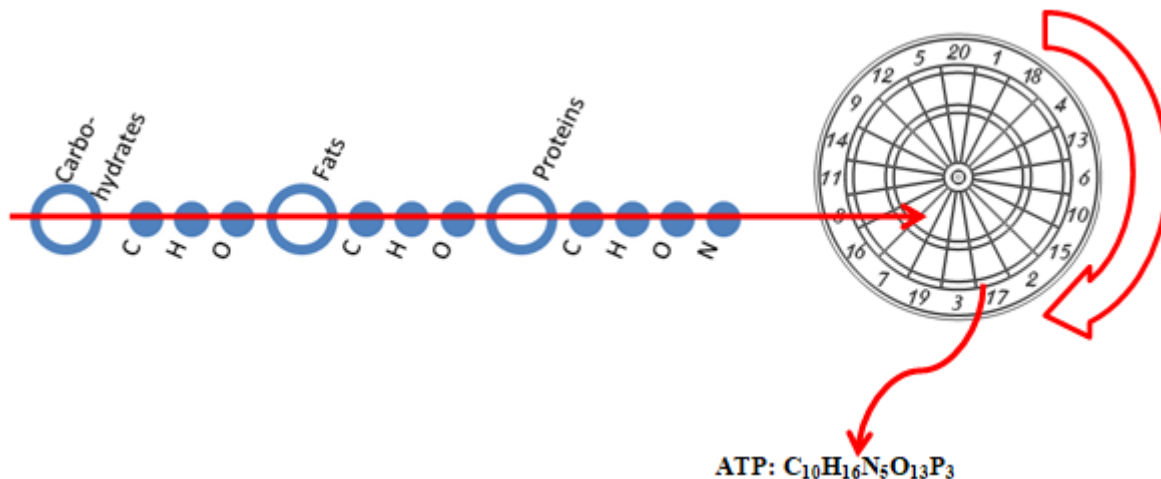The shape of apaddle wheel will differ depending on where it is located. Some examples as below might stimulate our imagination (the size will be measured in nanometres, approximately 50-200 nm), where each number can accept only one specific particle from a molecule, e.g. H, N, P, C and O, at the left side, and then a new molecule will occur, e.g. $C_{10}H_{16}N_5O_{13}P_3$, at the right side:

Let´s use our imagination again.
The molecule of a D-glucose chain as below can be seen as a flow of packages, which is directed by the Transformer:

The blood transports carbohydrates, proteins and fats, and blood cells contain molecules with the content of C, O, H, N, S and P and of course many others. Schematically it can be illustrated like this:

ATP: $C_{10}H_{16}N_5O_{13}P_3$

ATP synthase is a Transformer between molecules using the masses of elementary particles. The conclusion it that ATP synthase does not exist, it is not found in the cell. It is only an imaginary thing, based on wrong and not valid postulates and theories of physics and chemistry.

An alternative interpretation of Black Holes
As above, we are familiar with the Principle of Relations, its equations and its images.

Now we must apply those concepts to Black Holes.

Black Holes might be"pumps" for flows of packages in the Universe, and a Black Hole might be a Transformer. They transform masses of packages into the next system in the Universe, e.g. Galaxies and Suns.

We need to identify and map all flows in the Universe and show how Black Holes function as the Transformers for these.

However, the principle of transformation via the transformer is the same at all levels of the physical reality, e.g. between elementary particles as well as in the human body and in the entire Universe.

As above, we are familiar with the image of a Black Hole and its equation. Now we must take it further.

The equation of Black Holes is:
$r = 2Gm/c^2$

G is the gravitational constant, **c** is the speed of light, **m** is the mass of the black hole and **r** is the Schwarzschild radius.

The equation $E=mc^2$ contradicts Einstein´s own criterion for a complete theory that "*every element of the physical reality must havea counterpart in the physical theory*", since itraises the questionas to which element the concept c^2 has in the physical reality. The argument could be made, that the equation then is not valid.

Since the equation $E=mc^2$ has impacts on the general theory of relativity, then this theory would not be built on solid ground. When c^2 is taken off, the Black Hole equation falls apart. What´s left are the constants m and G, but they don´t make sense any longer.

As for now, the equation for black holes is derived from Einstein´s equation for general relativity:
1) Einstein´s Field Equations, EFE, consist of ten equations constituting the general theory of relativity. However here I need to simplify the basic concepts in order to compare the concepts of the principle of relations.
2) The most used equation is this

$$R_{\mu\nu} - \tfrac{1}{2}R\,g_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{c^4}T_{\mu\nu}$$

Where the left side is Einstein´s tensor and the right side is the energy-momentum tensor.
3) Working in geometrized units the equation is $G\mu\nu = 8\pi T\mu\nu$, where $G = c = 1$.
4) To understand and elaborate the fundament of EFE, I will use the even more simplified equation $G\mu\nu = T\mu\nu$.
5) The curvature of space-time cannot be equal to matter/energy.It is not the amount or size of masses that creates the behaviour of the Universe, called the space-time curvature. An argument could be made that it is not as previously described but rather a consequence of aRb.
6) The equation must be $G\mu\nu T\mu\nu$, which will now be seen as a description of the universe.
7) STCM means Space-Time-Curvature of Masses, i.e. STCM = $G\mu\nu T\mu\nu$.

The simplified formula $G\mu\nu T\mu\nu$ can be transformed to X = aRb:
1) $G\mu\nu \neq T\mu\nu$, i.e. mass and form are one in co-existing; it is $G\mu\nu T\mu\nu$.
2) aRb results in gravitation by flows of packages, i.e. p_{1-n}, between bodies *a* and *b* in universe.
3) Form is the system where mass flows. Hence, the concept "system" replaces the concept "form" or any of its synonyms, e.g. architecture, design, space and shape.
4) What is left is RS, i.e. Relation and System, which is aRb.
5) From the equation $G\mu\nu = T\mu\nu$ there are two valid concepts, i.e. mass, m, and form, f.
6) Then $G\mu\nu T\mu\nu$ is equal to mf, where m can stand for m_1, m_2, $m_3 \ldots = p_{1-n}$ and where f can stand for form, which is the system, i.e. a_1, b_1, $c_1 \ldots$

7) Now we can translate GμυTμυ into aRb, i.e. $a_1p_{1-n}b_1$.

Then, by using the equation X = aRb, we can transform the most important equations of force, relativity and quantum into the equation as below, which unites force, relativity, quantum and energy with Black Holes, dark matter and dark energy:
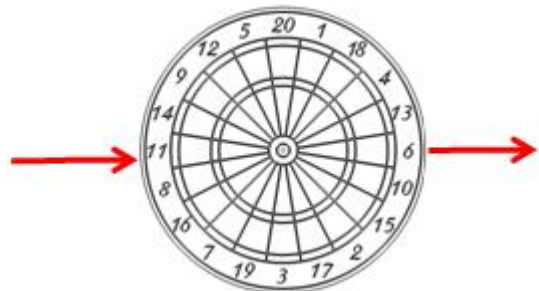
$$X = a(\Psi(x,t) = p_{1-n})b$$

where **X** stands for force, gravitation and energy, **a** and **b** are systems and **p_{1-n}** is the flow of packages, i.e. $X = ap_{1-n}b$.

Simulations made by NASA´s Ames Research Center in California´s Silicon Valley, using supercomputers, show how flows of gases between galaxies, i.e. the ebb and flow of gases, create new stars. The results of the simulations also show that space is not empty, which we know from aRb, a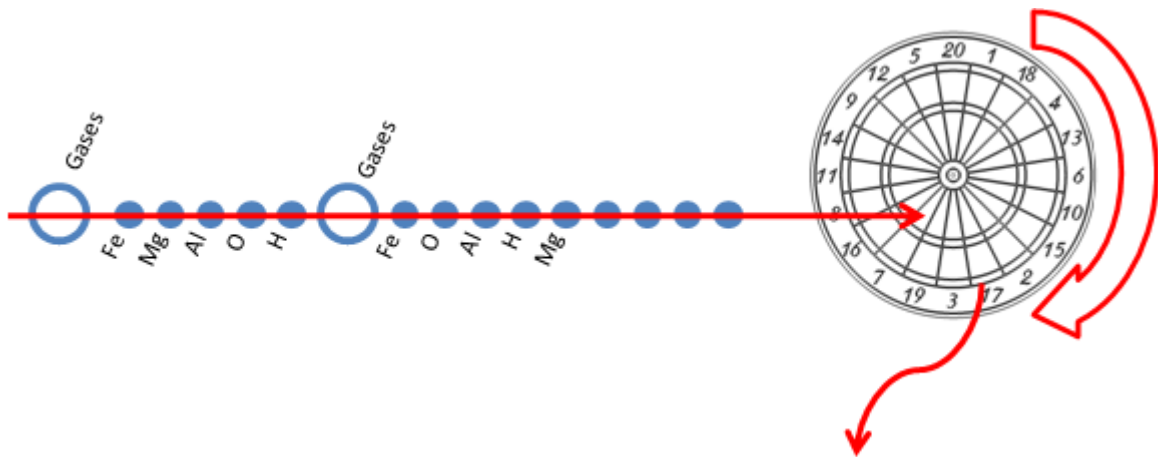nd which we now know also with this proof. These results are supported by the Lyman alpha forest[7], looking like the so-called intergalactic medium.
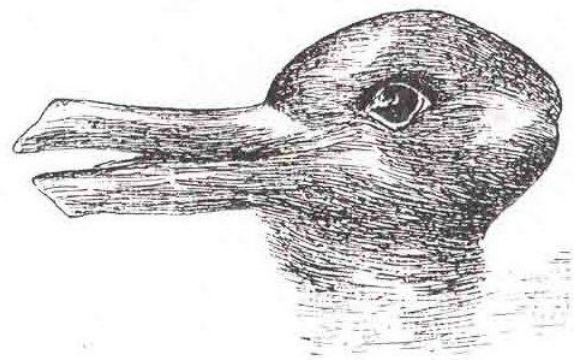
The Transformer in the Universe
Based on the basic model below, we can now imagine how flows are being transformed in the entire Universe.

Let us first take the position that the main content of gas (X) in the Universe is hydrogen (H), then in combination with the elements of iron (Fe), aluminium (Al), magnesium (Mg) and oxygen (O), we can illustrate the Transformer:

The Sun, the Earth and Planets

Black Holes are Transformers between galaxies using packages of the so-called dark matter and dark energy. The conclusion is that Black Holes do not exist. They are only imaginary, based on wrong and not valid postulates and theories of physics.

The overall conclusion
It is difficult to understand how equations have counterparts in reality and how they are illustrated, based on those equations.
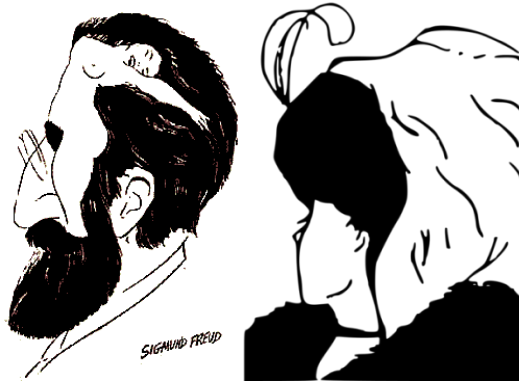How do we know that an image and its equation are not an illusion?

What will happens when we apply this study to concepts such as gravitation, quantum, energy and force?

Notes
1. https://www.nobelprize.org/prizes/chemistry/1997/9171-pressmeddelande-nobelpriset-i-kemi-1997/
2. https://www.jpl.nasa.gov/edu/news/2019/4/19/how-scientists-captured-the-first-image-of-a-black-hole/
3. Ambiguous images can also illustrate the problem. The best-known image is the rabbit-duck illusion, which Wittgenstein explained by "seeing that" or "seeing as":

Then of course we have these two images:

SIGMUND FREUD

4. https://www.quora.com/What-is-the-mathematical-equation-for-a-black-hole

5. This statement/requirement and the following theory are explained in two books, i.e. The Principle of Relations, Cambridge Scholars Publishing UK and The Theoretical Foundation of Physical Reality, AuthorHouse UK.

6. Page 777 in the PHYSICAL REVIEW, VOLUME 47, MAY 15, 1935: Can Quantum-Mechanical Description of Physical Reality Be Considered Complete? By A. Einstein, B. Podolsky and N. Rosen, *Institute for Advanced Study, Princeton, New Jersey.*

7. Lyman alpha systems and cosmology (berkeley.edu)