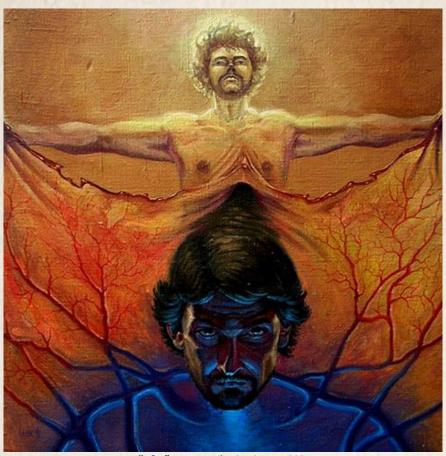


The New Cosmic Philosophy

Volume VII



"<u>A&R</u>" canvas, oil, 70x70 cm, 1999. Copyright © <u>Serge Laisk</u>

An amateur's essay on the Universe ...
Who are we? Where are we from? Where do we go?
A Human being, his Worlds, his Gods...

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1. SPIRIT

1.1. The interpretation of the word SPIRIT in religious texts

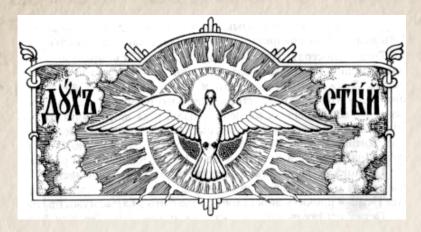
"In all Indo-European languages (including Russian) the word 'Spirit' rooted back to the Proto-Indo-European root *-dheu (to blow). The Greek word '&eós' (God) and the Sanskrit 'dhjana' (meditation) have the same origin. We also observe such analogies in Semitic languages: the Jewish "ruah", the Arabic "nafas", the Persian "dam" — all these nomenclatures of Spirit are translated as "breath". This can be explained in the following way: when a human being gained insight into Spirit, his central nervous system perceived it as a cool whiff. That's why holy writings around the world — beginning with the Bible and ending with the Vedas — claimed that God wrote them by his 'Breath'."

The Orthodox Christians believe that the Holy Spirit, together with Father and Son of God, is the Creator of visible and invisible worlds: "In the beginning God created the heaven and the earth. The earth was formless and empty, and darkness was upon the face of the deep, and the Spirit of God moved upon the face of the waters." (Gen.1:1-2).

For this reason, the word SPIRIT is often replaced with the HOLY SPIRIT and the SPIRIT of GOD in religious texts.

The word "Holy Spirit" (from the Latin spiritus meaning "breath") appears as either alone or with other words, in the Hebrew Bible (Old Testament) and the New Testament. Combinations include expressions such as the "Holy Spirit", "Spirit of God", and in Christianity, "Spirit of Christ".

The word Spirit is rendered as Γ In (ruach) in Hebrew-language parts of the Old Testament. In its Aramaic parts, the term is rûacḥ. The Greek translation of the Old Testament, the Septuagint, translates the word as $\pi v \in \tilde{\nu} \mu \alpha$ (pneuma).





The Hebrew Bible contains the term "Spirit of God" (ruach hakodesh) in the sense of the might of a unitary God. This meaning is different from the Christian concept of "Holy Spirit" as one personality of God in the Trinity. The Christian concept tends to emphasize the moral aspect of the Holy Spirit more than

Judaism, evident in the epithet Holy Spirit that appeared in Jewish religious writings only relatively late but was a common expression in the Christian New Testament.

According to theologian Rudolf Bultmann, there are two ways to think about the Holy Spirit: "animistic" and "dynamistic". In animistic thinking, it is "an independent agent, a personal power which like a demon can fall upon a man and take possession of him, enabling him or compelling him to perform manifestations of power" while in dynamistic thought it "appears as an impersonal force which fills a man like a fluid". Both kinds of thought appear in Jewish and Christian scripture, but animistic is more typical of the Old Testament whereas dynamistic is more common in the New Testament. The distinction coincides with the Holy Spirit as either a temporary or permanent gift. In the Old Testament and Jewish thought, it is primarily temporary with a specific situation or task in mind, whereas in the Christian concept the gift resides in man permanently.

The "Holy Spirit" in Judaism generally refers to the divine aspect of prophecy and wisdom. It also refers to the divine force, quality, and influence of the Highest God, over the universe or over his creatures, in given contexts.

Another Stoic concept which offered inspiration to the Church was that of 'divine Spiri'. Cleanthes, wishing to give more explicit meaning to Zeno's 'creative fire', had been the first to hit upon the term pneuma, or 'spirit', to describe it. Like fire, this intelligent 'spirit' was imagined as a tenuous substance akin to a current of air or breath, but essentially possessing the quality of warmth; it was immanent in the universe as God, and in man as the soul and life-giving principle. Clearly it is not a long step from this to the 'Holy Spirit' of Christian theology, the 'Lord and Giver of life', visibly manifested as tongues of fire at Pentecost and ever since associated — in the Christian as in the Stoic mind — with the ideas of vital fire and beneficient warmth.

Wikipedia — free encyclopedia

1.2. The interpretation of the word SPIRIT in works of K. Tsiolkovsky

"... I acknowledge only spirit made up of more disperse and elementary matter that differs from that we know ..."

K. Tsiolkovsky
"Do Any Spirits Exist?"
1932

"Spirit is immortal, eternal, unchangeable, initially (in the bud) sensitive, because it is an atom, beginning of matter with these particular properties. There is no matter without inborn ability to live."

"The life of spirit (ideal atom) now is poor, now is singularly impressionable, now is complicated, now is simple, depending on a place of its living: the body of snail, infusoria, elephant, or a human being. Its life can be compared to the life of immortal (an atom or its parts are never-dying), but infinitely inactive (lacking in initiative but sensitive) being that wanders from hostel to hostel, from palace to shack, from the modest house to the luxurious banquet hall, from monastery with strict rules to bawdy house. Depending on a place of living, now it's poor, now is rich; then is strict, then is promiscuous; then is happy, then is sad; then is clever, then is stupid; now it's a man of letters, now is ignoramus; then is mentally alert, then is unconscious; then is retentive, then is completely forgetful. There is no past as well as no future for it in the primitive state. Sometimes it lives more in the past and future than in the present. (For example, an old man lives more in the past, a child and animal — in the present, a young person — in the present and future)."

"But at the lower boundaries of the living, we see very complex matter only, this substance is complex in terms of chemistry. Less complex bodies come next to the complex ones, even such a human being creates now from the mineral substances. Then come simle bodies. But they are divided into the parts of one nature, one beginning, which we called spirit of matter (entity, beginning, substance, ideal atom).

Thus, all the living and the so-called nonliving have one beginning, one spirit, and therefore, one common property: ability to heal, appear any time under favourable conditions to live a rich psychical life. It is subjected not only to the Earth, but to all other planets and suns. Their matter is also potentially alive as well as the Earth's matter. Everything in the entire Universe must have inborn ability to live. I rest on science, on the idea of Earth and Sky unity."

K. Tsiolkovsky

"Ethics or Natural Basis of Morality"

1902-1903

"A human or even a higher being reflects the Universe in incomplete, but proper way. Such a combination of spirits is very complex and a single-control state of spirits. But this combination is the most passive and the least stable at the same time. However, this stability can be longer. It's vague and depends a lot on the mechanism of combination. The republic existence and stability depend on the laws of the land as well as animal life depends on perfection of its structure. The government can have such a permenant mechanism that will help to rule over all other organizations. In the same way a shrewd animal can dominate over all other types of animals."

K. Tsiolkovsky

"The Citizens of the Universe"

1933

"Calm and nonentity prevail in inorganic nature, although such things cannot be there in mathematical (i.e. strict) sense: an atom represents one stage of the primitive life."

K. Tsiolkovsky

"Mind and Martyrdoms"

1925

"... the entire world is a complex of immortal imperishable spirits (atoms). There is nothing except them. The properties of matter represent result of their combination and interaction."

K. Tsiolkovsky

"Science and Faith"

1917

1.3. The basic definitions of the word SPIRIT

Based of these scientific researches and information from various religious texts, we introduce two definitions of the word SPIRIT. Moreover, they will not contradict either science or religion:

SPIRIT -

world (in the broadest sense of this word).

SPIRIT -

the undestroyable basis of any object, process or phenomenon.

Based on the mentioned above definitions, we will try to describe this concept in more detail.

2. Elementary and fundamental objects of the Universe

2.1. The concepts ELEMENTARY and FUNDAMENTAL

"Here we`d like to begin with the elements of the Universe. Who is the immortal citizen of the Universe? Its atom. An atom – not a scientific one, but a real that is indivisible particle, matter. Does such particle exist? Scarcely."

K. Tsiolkovsky

"The Citizens of the Universe"

1933

"In all organisms ... there is something constant that both doesn't disappear and doesn't fall into pieces for many billion years ... In brief, the basis of matter is infrangible, the beginning is unknown, the true, indivisible, final, primal element of matter. It's immortal, eternal and unchangeable ... If it is called spirit, then it does exist. It never dies at all ..."

K. Tsiolkovsky
"Do Any Spirits Exist?"

1932

Nowadays some objects (electron, photon, quark, etc.) are considered to be structureless, i.e. primary fundamental objects. Other objects (the so-called composite objects such as proton, neutron, etc.) have a complex internal structure, but, nevertheless, according to modern concepts, it's impossible to separate them into parts.

That's why

AN ELEMENTARY— is a subjective characteristic of an object. One failed to disintegrate it up to this day.

A FUNDAMENTAL — is a subjective characteristic of elementary object. One failed to describe it up to this day.

And nothing more ...

After some time, the human beings will cognize other more elementary «fundamental» objects of the Universe.

2.2. The atomic and subatomic objects

"An atom is the smallest constituent unit of ordinary matter that has the properties of a chemical element. Solid, liquid, gas, and plasma are composed of neutral or ionized atoms. Atoms are extremely small; typical sizes are around 100 picometers (a ten-billionth of a meter, in the short scale). Every atom is composed of a nucleus and one or more electrons bound to the nucleus. The nucleus is made of one or more protons and typically a similar number of neutrons. Protons and neutrons are called nucleons. More than 99.94% of an atom's mass is in the nucleus. The protons have a positive electric charge, the electrons have a negative electric charge, and the neutrons have no electric charge. If the number of protons and electrons are equal, that atom is electrically neutral. If an atom has more or fewer electrons than protons, then it has an overall negative or positive charge, respectively, and it is called an ion.

The idea that matter is made up of discrete units is a very old idea, appearing in many ancient cultures such as Greece and India. The word "atom" was coined by the ancient Greek philosophers Leucippus and his pupil Democritus. However, these ideas were founded in philosophical and theological reasoning rather than evidence and experimentation. As a result, their views on what atoms look like and how they behave were incorrect. They also could not convince everybody, so atomism was but one of a number of competing theories on the nature of matter. It was not until the 19th century that the idea was embraced and refined by scientists, when the blossoming science of chemistry produced discoveries that only the concept of atoms could explain.

In 1860 the first international chemical congress was held in Karlsruhe, Germany, to settle some of the contemporary chemical disputes—how to define molecule and atom. An atom is the smallest unit of simple and complex matters."

"In the physical sciences, **subatomic particles** are particles much smaller than atoms. There are two types of subatomic particles: elementary particles, which

according to current theories are not made of other particles; and composite particles. Particle physics and nuclear physics study these particles and how they interact.

The electron is a subatomic particle, symbol e- or b-, whose electric charge is negative one elementary charge. Electrons belong to the first generation of the lepton particle family and are generally thought to be elementary particles because they have no known components or substructure. The electron has a mass that is approximately 1/1836 that of the proton. As it is a fermion, no two electrons can occupy the same quantum state, in accordance with the Pauli exclusion principle. Like all elementary particles, electrons exhibit properties of both particles and waves: they can collide with other particles and can be diffracted like light.

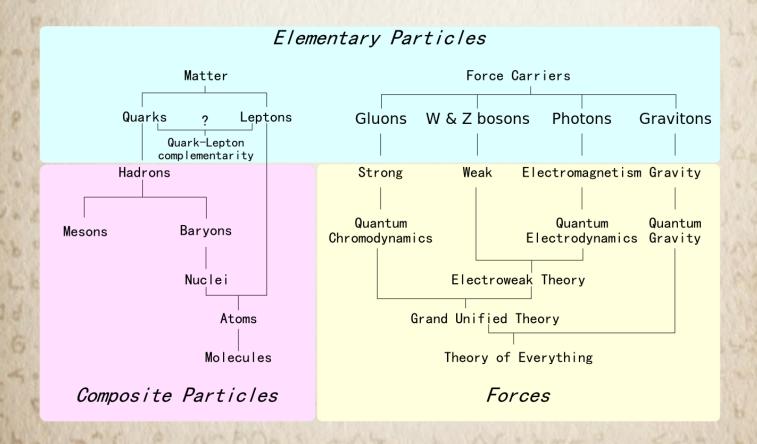
Protons and neutrons aren't fundamental. They are made of particles called quarks. There are a number of different types of quarks, called flavors. There are six types of quarks, known as flavors: up, down, strange, charm, top, and bottom. The proton consists of two up quarks and one down quark, which gives it a total charge of +e while the neutron is made of two down-quarks and an up quark. Protons have an electric charge of +1, exactly opposite the electron, while neutrons are neutral, with 0 charge. These two conditions are enough to determine the charge of their constituents, which are fundamental fermions much like the electron."

Wikipedia — free encyclopedia

2.3. The modern "fundamental" objects

The modern scientists discuss the following "fundamental" or "structureless" objects they named as:

- Leptons;
- Quarks;
- Gauge bosons:
 - o Photons;
 - o Gluons;
 - o Intermediate vector bosons;
 - o Gravitons;
- Higgs boson;



and this process doesn't rest on its laurels, there are more and more "fundamental" objects appear ...

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Once it was air, then "ether", then "molecule", "atom", "electron". And modern scientists persist to move in this direction...

3. The ORGANIZING fields

"In the Russian language, the word FIELD initially means a vast flat area. This word is used in various areas of the human life as a term to denote phenomena related or comparable to extension in space."

"The field paradigm represents all physical reality at a fundamental level; this reality reduces to a small number of interacting (quantum) fields. The paradigm is one of the most important and absolutely dominant in modern physics."

"In physics a force field is a vector field that describes a non-contact force acting on a particle at various positions in space."

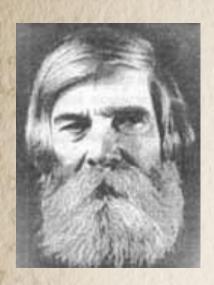
Wikipedia — free encyclopedia

A FIELD (FIRMAMENT) —

result, with absolute density, through which it's possible (theoretically) to transmit energy (information) with an infinitely high speed.



The terms the author connected with the FIELD and FIELD MATTER concepts he described in more detail in the II "HIDDEN KNOWLEDGE" Volume of "The New Cosmic Philosophy" book series (author's note).



"It must be recognized that all phenomena of the world, including processes inside the living beings or manifestations of spirit can and should be considered as derivatives of one world energy..."

V.M. BeKhterev

"Immortality of the human personality as scientific

problem"

Since we took as a basis idea that the word SPIRIT determines a driving force of all things, then we can assume the existence of an ORGANIZING field:

AN ORGANIZING FIELD –
single energy (driving force) that makes all objects of
the certain World functional.

We can imagine the World (in the broadest sense of this word) as the hierarchy of many Worlds where the Universe (the World of Human Beings) is one of them.

Thus, we can assume the existence of various organizing fields that were before the Universe or the "Big Bang" and exist even today, but lack of the technical means doesn't allow us to measure their parameters.

So, the integrity of each hierarchical level of the World (in the broadest sense of this word) is determined by a specific ORGANIZING FIELD (driving force, single energy ...), which is the basic structure of this World.

The ORGANIZING FIELD of the Universe – single energy (driving force) that makes all objects of the Universe functional.

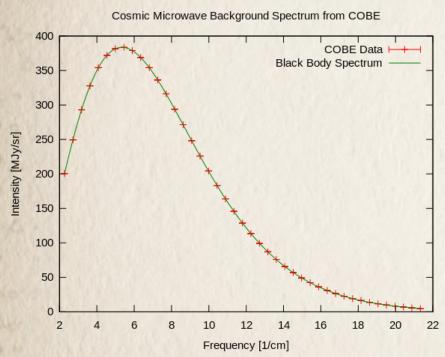
One of the microwave background radiations of the Universe is already found – the so-called "universal background".

"The soviet astrophysicist I. S. Shklovsky was the first who introduced the term cosmic microwave radiation, which is commonly used in the Russian literature (see Shklovsky, the Universe, life, mind, Moscow: Science, 1987).

The cosmic microwave background (CMB) is electromagnetic radiation as a remnant from an early stage of the universe in Big Bang cosmology. In older literature, the CMB is also variously known as cosmic microwave background radiation (CMBR) or "relic radiation".

The first prediction of the existence of "relict radiation" or radiation remaining from the "Big Bang" was made in 1948. This derived from the seminal dissertation work of Ralph A. Alpher. He was a doctoral student of George A. Gamow and developed several critical advances in cosmology in late 1946, 1947, and 1948. Alpher developed the ideas of "hot" big bang cosmology to a high degree of physical precision and was the first to present the idea that radiation, not matter, predominated the early universal adiabatic expansion first suggested by A. Friedmann in the early 1920s. The discovery of CMB is landmark evidence of the Big Bang origin of the universe. When the universe was young, before the formation of stars and planets, it was denser, much hotter, and filled with a uniform glow from a white-hot fog of hydrogen plasma.

Precise measurements of the CMB are critical to cosmology, since any proposed model of the universe must explain this radiation. The CMB has a thermal black body spectrum at a temperature of 2.72548 ± 0.00057 K. The spectral radiance dEv/dv peaks at 160.23 GHz, in the microwave range of frequencies, corresponding to a photon energy of about $6.626\times10-4$ eV. Alternatively, if spectral radiance is defined as $dE\lambda/d\lambda$, then the peak wavelength is 1.063 mm (282 GHz, $1.168\times10-3$ eV photons). The glow is very nearly uniform in all directions, but the tiny residual variations show a very specific pattern, the same as that expected of a fairly uniformly distributed hot gas that has expanded to the current size of the universe. As a result, most cosmologists consider the Big Bang model of the universe to be the best explanation for the CMB."



The spectrum of relict radiation according to the data obtained with the help of FIRAS tool. On the board of the COBE satellite

Wikipedia — free encyclopedia

Isotropy, isotropism (from the Greek isos (ἴσος, "equal") and tropos (τρόπος, "way") is uniformity of the physical properties in all orientations, invariance, symmetry in relation to the route selection.

ISOTROPY – uniformity of the physical properties in all orientations.

The discovery of cosmic microwave background encouraged the scientific world, since it proved the existence of radiation with a high degree of isotropy.

Although it's worth noting that the found cosmic microwave background differs from the ORGANIZING FIELD of the Universe.

4. A new paradigm of the word SPIRIT

Since SPIRIT is the driving force of all things and indestructible basis of any object, then we rely on the modern scientific knowledge and try to find SOMETHING that meets these requirements and can be qualified as the synonym for the word SPIRIT.

Conditionally, modern science is familiar with such driving forces (indestructible basises) as:

- objects that modern scientists consider for the time being to be "elementary" and "fundamental" ones;
- organizing fields that will be found in prospect.

Why do we use the word conditionally?

Just for the simple reason that:

 modern scientists constantly clarify and change "elementary" and "fundamental" objects; researchers found only one cosmic microwave background yet, although
there may be lots of them. And if we take into account that the Universe
is the World of human beings, then we can assume the existence of other,
even higher-frequency cosmic microwave backgrounds that existed
before the Universe or the "big bang" and represent ORGANIZING FIELDS
for other (different from the Universe) levels of the World (in the broadest
sense of this word).

The hierarchical level of the Universe is determined by a specific ORGANIZING FIELD (driving force, single energy) that is the basic structure of this Universe.

The Universe depends on this field, as a result of which it exists in the form we "see" it (it`s more correct to say we sense it). This radiation is essential for its structure, it changes in dynamics thanks to changes in the parameters of this radiation, etc.

This radiation is the main component of all objects of the Universe, including "elementary" and "fundamental" ones.

And lots of objects from the Universe represent simple complexes in their different "elementary" and "fundamental" combinations.

That's why we can assume that

SPIRIT – **AN ORGANIZING FIELD** that is the basis for the certain World.

The SPIRIT of the Universe
(the Holy Spirit, the Spirit of God) –

AN ORGANIZING FIELD that is the basis of the
Universe.

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5. "BRAIN EXERCISE". The questions for my readers

- What are the reasons for A FIELD MATTER to be considered as FIRMAMENT?
- What symbol denotes SPIRIT in various religions and what is the reason for using it?
- Can the words HOLY SPIRIT, SPIRIT OF GOD, SPIRIT OF THE UNIVERSE be considered as synonyms?
- What is meant by AN ORGANIZING FIELD?
- Is it necessarily for AN ORGANIZING FIELD to have such property as ISOTROPISM?
- Can SPIRIT be considered as "breath of God"?
- Do physicists discover any "elementary" objects nowadays?
- Do physicists discover any "fundamental" objects nowadays?
- What is meant by SPIRIT?

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