Unity Principle: Dialectical Nature of the Universe

Peter Kohut
pekohut@gmail.com

Abstract

The world looks like disintegrated into many different and independent spheres, but we feel intuitively that a great variety of existing forms should have a common basis. How can we come to the true knowledge about our existence? How does the Universe work? A great desire of man is to find a true meaning of our life and the essence of existence. Many philosophers and scientists have expressed the Unity Principle by saying “everything is connected to everything else”, but its essence has not been detected. On the base of dialectical logic, the Unity Principle is discovered which illustrate not only the exact mechanism how the physical Universe may work, but also the essence of Consciousness.

Keywords: universe, truth, theoretical physics, unity principle, dialectical logic, quantum dipole, energy, force, whole, part, one, many, space, time, consciousness, subject, object

Dialectical Logic and the Unity Principle

Contemporary theoretical physics enters the deep crisis resulting from its positivistic and post-positivistic approach supposing reality to be mechanical and atomistic made of point-like particles where the essence of matter, energy, space and time are undetectable mysteries. But the Universe (reality) is dialectical (relational) and so accessible by dialectical logic. In contrast with the mechanical model, the Universe does not consist of point-like particles, but of elementary bipolar relations of opposites (+/-) named quantum dipoles or quantum connections. Schema of elementary quantum dipole:

\[
\begin{array}{c}
\text{Something (+)} \\
\text{Other (-)}
\end{array}
\]

(one side)                              (other side)

The Unity Principle means that everything is connected (in relation) to everything else in the sense that every positive pole + of the Universe creates connections to all negative poles “-“, and so reciprocally. The Universe is a network of elementary quantum connections (dipoles) +/-, where every “+” is connected to all “-“.

[Diagram of quantum connections]
There is no space and energy outside quantum connections as only they create the whole reality. Quantum connections are not placed in space, but create it. They represent the elementary quanta of space with the elementary volume $v = 3.87 \times 10^{-45} \text{ m}^3$. Though elementary quantum dipoles are indistinguishable by their spatial volume characteristics, they differ from one another by energy $e_i$ and length $d_i$, so that the following basic equation is valid:

$$ e_i d_i = \alpha hc/\pi = 4.61 \times 10^{-28} \text{ kg.m}^3\text{s}^{-2} $$

where $h$ – Planck’s constant, $\alpha$ - fine structure constant, $c$ - speed of light. Very short quantum dipoles create the structure of basic particles (photons, electrons and protons), while long quantum dipoles create their mutual connections. Very long quantum dipoles connecting celestial bodies mutually create cosmic vacuum, so we name them vacuum quantum connections.

Opposite poles of quantum dipole attract and repeal each other at the same time causing the dipole oscillation (rotation). Free quantum dipoles = photons oscillate thanks to attraction and repulsion of its two opposite sides (poles).

**PHOTON = FREE OSCILLATING QUANTUM DIPOLE (+/-)**

Forces of attraction and repulsion are always in a mutual dynamic equilibrium at all levels of reality from the level of elementary quantum dipoles until the level of the whole Universe. There are **only two basic forces – attraction and repulsion**. All known forces are only their manifestations. There are only **two basic interactions – non-local and local**. Non-local interactions are manifested through mutual attraction and repulsion of opposite poles of quantum dipoles, while local interactions represent always repulsive forces acting through mutual local touch pressures between neighbouring elementary dipoles that push each other by their spaces. Attractive force is always non-local, while repulsive force can be non-local (e.g. in a photon) or local. Local force is always repulsive:
The above picture shows two quantum dipoles acting locally by their mutual repulsive pressures. They create elementary quanta of space, but differ by their lengths and energies. The left one is shorter, stronger having more energy and the right one is weaker, longer with less energy.

As all flows coming from outside act to our basic senses (sight, hearing, touch, smell, taste) locally through touch interactions theoretical physics has a problem to accept “invisible” non-local connections although they result just directly from rational dialectical logic and quantum mechanics being confirmed experimentally and having a practical usage [16], [17]. Without instantaneous non-local connections neither basic physical phenomena nor the essence of consciousness are explainable.

Not only the photon, but all particles oscillate, though their oscillations are more complicated:

**Electron** $e^-(+/2-)$ created by two quantum dipoles:
Proton $p^+ (3+/2-)$ made of six elementary quantum dipoles:

All stable structures (particles) oscillate in one line (axis of oscillation) to the one common centre during attraction. All dipoles of a proton are very energetic (short and strong) so their forces of mutual attraction and repulsion are so strong that can compensate the mutual local repulsive pressures of spaces of quantum dipoles in such a way that the proton is the most stable composite structure. If structures are more complicated and composite, the mutual local pressures of dipole spaces destroy their compositions at the moment of their creation (so-called resonances). From the structure of a proton with three tops of positive poles is evident why the experiments in electron-proton scattering found that electrons scattered off three points inside the proton. It is not because of a quark structure but bipolar essence of a proton.

Energy and Force

Energy is a motion or potential for motion resulting from mutual attraction and repulsion of quantum dipoles. Forces of attraction $f_{ia}$ and repulsion $f_{ir}$ acting through the entire length $d_i$ of a quantum dipole create, by multiplication with its length, the whole energy $e_i$ of a quantum dipole: $e_i = (f_{ia} + f_{ir})d_i$. From the mutual equilibrium between attractive and repulsive force of a quantum dipole $f_{ia} = f_{ir}$, the following relation is valid: $f_{ia} = \alpha h c / (2\pi d_i^2)$. It is a classical Coulomb’s law expressing the dependence of attractive force acting between elementary electric charges on their distance. It expresses at the same time the attractive force acting between opposite poles of elementary quantum dipole with a length $d_i$ and is indirectly proportional to the square of its length.

Note: All symbols ($v$, $e_i$, $d_i$, $f_{ia}$, $f_{ir}$) used in formulas represent quantitative values (measures) of given qualitative characteristics like space, energy and force.
**Whole and Part**

The Part is separated from the Whole only if it is separated from all parts of the Whole. Its separation means its connection to the Whole, so to all rest parts of the Whole. As a result every Part is connected to all rest parts of the Whole. As connections are also parts of the Whole, there is no difference between parts and connections at the elementary level. Elementary connections are elementary parts and elementary parts are elementary connections of two opposite sides (+/-).

**Object A** is defined exactly by quantum dipoles (+/-) creating its *internal structure* as well as *external vacuum quantum dipoles* (+/-) connecting it to, and separating it from all rest parts of the Whole:

Let object $A$ is defined by:
- $a^+$ number of positive poles,
- $a^-$ number of negative poles,
- $n_a = a^+.a^-$ number of quantum dipoles creating the internal structure of object $A$.

The internal structure of object $A$ can be expressed as $(a^+/a^-)$, e.g. $(3+/2-)$ representing the internal structure of a proton.

If $a^+ = a^-$ object $A$ is neutral,
if $a^+ > a^-$ object $A$ is positively charged,
if $a^+ < a^-$ object $A$ is negatively charged.

Let the whole Universe is defined by $k$ positive and $k$ negative poles, then the number of elementary quantum dipoles of the Universe is $k^2$.

The number of external vacuum quantum dipoles connecting the object $A$ with the whole Universe is: $a^+(k-a^-) + a^-(k-a^+)$.

Objects $A$ $(a^+/a^-)$ and $B$ $(b^+/b^-)$ are interconnected by their mutual quantum connections with the number is $(a^+b^- + a^-b^+)$. 
If the object $C (c^+/c^-)$ consists of two objects $A$ and $B$, then $c^+ = a^+ + b^+$, $c^- = a^- + b^-$ and the number of quantum dipoles creating the internal structure of object $C$ is:

$$n_c = c^+c^- = (a^+ + b^+)(a^- + b^-) = a^+a^- + (a^+b^- + a^-b^+) + b^+b^-$$

We can see that besides quantum dipoles creating internal structures of objects $A$ and $B$ with the number $n_a = a^+a^-$, $n_b = b^+b^-$ respectively, the new object $C$ is created also of their mutual quantum connections with the number $(a^+b^- + a^-b^+)$. It is the reason why the object represents a higher quality comparing to a simple sum of qualities of objects $A$ and $B$.

We can interpret it by the structure made of a proton $(3+/2-)$ and an electron $(+/2-)$: 

![Diagram showing proton and electron structures](image)

The mutual interaction between the proton and electron is made of $3.2+2.1=8$ quantum dipoles. Attractive non-local Coulomb force, acting between opposite poles of 6 quantum dipoles creating the internal structure of a proton, is great because quantum dipoles are very short so that they can compensate enormous repulsive local pressures between their spaces in such a way that the mutual dynamic equilibrium between attractive and repulsive forces in a proton is unbroken.

Forces differ by the level of energies and distances at which the mutual equilibrium between attractive and repulsive forces is manifested. Strong forces are manifested at the level of internal structure of a proton, nuclear force is manifested at the level of mutual quantum connections between nucleons and other components in nuclei, electrostatic force is manifested between charged objects and gravitational force is manifested through very long quantum dipoles connecting celestial bodies and other more massive bodies mutually.
The strong force, creating the structure of a proton, is about $10^5$ times stronger than the weak nuclear force, by which the “-” pole is connected to the structure of a proton and so creating the structure of a neutron. We see the real reason why the neutron is unstable. The distant new pole “-”, added to the structure of a proton, creates three new quantum dipoles which are 363 times weaker and longer than quantum dipoles creating the structure of a proton. So if the structure of a neutron is excited by one photon, this can easily catch the distant “-” pole from the structure of a neutron and consequently create the structure of an electron by changing a neutron into a proton. It is the so-called $\beta^-$ decay. It is absurd to include virtual $W^-$ bosons in that simple scheme of $\beta^-$ decay of a neutron and suppose its energy to be very high because of very short diameter of a weak force, about 100 times shorter than the diameter of a strong interaction! But on the contrary, according to our analysis [15], the diameter of a weak nuclear interaction (force) is 363 times lower than that of a strong interaction inside a proton. So $\beta^-$ decay belongs to the category of nuclear interactions.

Let bodies $A$ and $B$ are neutral – then the attractive Coulomb force acting between opposite poles of mutual quantum connection is fully compensated by their local repulsive pressures as well as local pressures of outgoing quantum dipoles connecting both objects $A$ and $B$ to the whole Universe. If $A$ and $B$ are oppositely charged, the attraction between opposite poles of mutual quantum connections prevail over local repulsive pressures of outgoing quantum connections. If $A$ and $B$ are likely charged, local repulsive pressures of outgoing quantum connections prevail over attractive forces acting between opposite poles of mutual quantum connections. As the mutual equilibrium of attractive and repulsive forces must be unbroken, the seeming predominance of ones forces over others is cancelled by mutual motions of objects towards each other or out of each other. Attractive gravitational force acting between celestial bodies mediated by their non-local mutual vacuum quantum connections looks like being not fully compensated by local repulsive pressures of their outgoing quantum connections. But this seeming imbalance of forces is compensated by the repulsive force causing the cosmic expansion.

**Gravity is a global cosmic phenomenon because it is a direct consequence of cosmic expansion!**

**Cosmic gravity acting between celestial bodies is a counterbalance compensating the repulsive force causing the cosmic expansion.**

The detail explanation of all forces and interactions including internal structure of basic particles is given in the Appendix of my paper [15].

**One and Many**

“One” is nothing without the other. “One” as a whole can create its relation to itself only if it divides itself into many ones. “One” creates its relation to itself through its relations to others. Through them it reflects itself into itself (self-reflection). “One” as a whole divides itself into many ones in such a way that they create the unity of the “One” in the sense that every “one” is connected to all other “ones”. Through many ones the whole One is structured and quantized. Internal structuration means that the “One” repels from itself many ones by repulsion and, at the same time, holds them in a unity thanks to attraction. As the whole
“One” represents a bipolar relation “something (+) – other (-)”, its internal differentiation means that it gradually repeals from itself both opposites after one another. One as a whole comes from its unity to its diversity by internal structuration and at the same time it again and again reflects itself into its unity and so performs its self-reflection. “Many” as a negation of “One” is overcome by its return to its unity – negation of negation. Negation of negation is a self-reflection, meaning the One represents always the Unity which can exists only through its internal structuration, where everything is reflected in everything else, everything is connected to everything else and everything communicates with everything.

“One” represents the self-creating and self-reflecting Unity of the highest complexity where everything is reflected in everything else. **Self-reflection of self-closed system of high complexity means the Life and Consciousness.** Therefore the Universe as a whole is a self-closed, self-creating, self-knowing and self-aware system of the highest complexity and so represents the highest Consciousness manifesting itself as a “subject-object” relation.

Although theoretical physics limits its interest to only objective external differentiated side of reality, the Universe has also its internal united self-reflecting subjective side, so that the whole Universe (reality) must be studied by philosophy as well as other branches of science (e.g. science of life and consciousness) from the viewpoint of its both sides – internal and external as a “subject-object” relation. Contemporary positivistic scientific paradigm is limited and accepts only a certain part of objective reality mediated by local mechanical interactions therefore it cannot lead to the true knowledge. A **new scientific paradigm** must be based on **dialectical logic of rational thinking** as well as deep **spiritual insight** into the unity (subjectivity) of existence.

If we study the internal structuration and differentiation of the Universe without looking at its self-reflecting subjective unity, we see the whole reality as an expanding physical Universe, which differentiates itself in such a way that it expels from itself gradually, step by step, new positive “+” and “-” negative poles “-” after one another. Continuing internal differentiation of the Universe, its plurality generation and structuration, means its cosmic expansion. The Universe is an expanding network of quantum dipoles (connections) transiting from its one quantum state to the following. At the beginning of expansion the Universe is only a simple quantum dipole (+/-), then he repels suppose firstly one positive pole (+) and after its negative one (-), so that after two elementary quantum jumps the Universe represents the structure (2+/2-). For simplification of our analysis we consider and number only quantum transitions between symmetric quantum states, when two new poles are expelled after one another. At the first quantum state the structure of the Universe is (+/-), at the second symmetric quantum states it is (2+/2-), at the third quantum state it is (3+/3-),…, at the k symmetric quantum state its structure is (k+/k-) and is created of $V_k = k^2$ elementary quantum dipoles (connections). The value $V_k = k^2$ represents the volume of space given by the number of elementary quantum dipoles.
The table of increasing cosmic network of quantum dipoles during cosmic expansion

<table>
<thead>
<tr>
<th>Quantum state</th>
<th>1</th>
<th>2</th>
<th>k-1</th>
<th>k</th>
<th>k+1</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poles</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+/-</td>
</tr>
<tr>
<td>2</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+/-</td>
</tr>
<tr>
<td>k-1</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+/-</td>
</tr>
<tr>
<td>k</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+/-</td>
</tr>
<tr>
<td>k+1</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>n</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

k – the number of positive respectively negative poles, as well as serial number of actual symmetric quantum state of the Universe form the beginning of its expansion and representing cosmic time showing the number of elementary quantum jumps.

The internal structuration of the Universe resulting in its cosmic expansion can be easily described by the following basic quantum space-time equation:

\[ V_k = k^2 \]

where:

**\( V_k \) – volume of cosmic space given by the number of quantum dipoles,**

**\( k \) – number of positive (or negative) poles as well as elementary quantum jumps of the Universe from the beginning of its expansion and representing cosmic time.**

This basic quantum equation reflects the internal division and structuration of the Universe creating thus its own expanding space and flowing time. The Universe is quantized as its energy and space are localised in its elementary quantum connections and its time is given by its elementary quantum jumps. Elementary quantum jumps represent elementary changes of the Universe, its elementary quanta of motion (time) to which all other changes (motions, times) can be related. These elementary quantum jumps define cosmic time. Time is not a mystery, but manifestation of motion of the Universe. Time is a measure of motion. Every local motion can be compared to the universal cosmic motion. As shown in my paper [8], contemporary one second corresponds to

\[ (3/4)((πc^5)/(2\hbar α))^1/2 = 8,144.10^{43} \]

elementary quantum jumps of the Universe between two symmetrical quantum states, so we can allocate the time \( \Delta t = (4/3)(2\hbar α/(πc^5))^{1/2} = 1,128.10^{44} \) sec to one quantum jump (\( α \)- gravitational constant). But it does not mean that the quantum jump has its duration. Time does not define
the duration of elementary quantum jump, but just contrariwise, time is defined by the number of elementary quantum cosmic jumps. Every process (motion) and its duration can be compared to universal time. If some process takes one second, it means that it corresponds to $8,144 \times 10^{43}$ elementary quantum jumps of the Universe. If the same process is dilated to two seconds (time dilation) because of high speed towards the vacuum or strong gravity (big gravitational potential), it corresponds to $2 \times 8,144 \times 10^{43}$ elementary quantum jumps of the Universe. Cosmic time represents the universal base through which all processes (motions, times) can be expressed. Both space and time are quantized and their quantitative characteristics can be numbered and expressed by integers.

If we allocate $\Delta t$ sec to one quantum jump, then the time of cosmic expansion is:

$$t = k \Delta t$$

and the basic space-time equation of the Universe, where the volume $V$ is expressed by $m^3$, obtains the following form:

$$V = z t^2, \quad \text{where } z = (d^2V/dt^2)/2$$

This is the basic equation of spatial dynamics of the Universe expressed by real dimensional units, where the spatial volume of the Universe is directly proportional to the square of time of cosmic expansion.

In that form space and time are presented as continuous values, but we must remember that in reality they are quantized and can be truly expressed only by integers. Thus, if we want to study space and time from the viewpoint of cosmology, we can use them as continuous values, but such an approximation is inappropriate at the quantum level. The detail analysis of the basic quantum space-time equation with its interesting and important consequences for cosmology is made in my papers [7], [8], [15].

**The Unity Principle and Occam’s Razor**

It is impossible to have a simpler relation than attraction and repulsion of opposites (+/-) which the whole reality is made of, where every “+” is connected to all “-“, and reciprocally. The Unity Principle is the clearest manifestation of Occam’s razor and results directly from dialectical logic of thinking reflecting the dialectics of existence. The highest complexity of the Universe is created of the highest simplicity of bipolar relations (+/-). Only direct non-local connections of everything to everything can allow the existence of life as a self-reflection (consciousness) of very complex self-closed structures - subjects. As everything is reflected in everything else, the whole Universe as a Unity represents a self-reflecting, self-mirroring, self-creating and self-aware system of the highest complexity – Consciousness. We do not need to create speculative theories like “Theory of Everything” or “Theory of Unified Field” but we need to understand deeply the exact and simple mechanism of the Unity Principle.
We need to know the simple TRUTH!

"Someday we’ll understand the whole thing as one single marvellous vision that will seem so overwhelmingly simple and beautiful that we may say to each other: ’Oh, how could we have been so stupid for so long? How could it have been otherwise!’"

J. A. Wheeler

Subject and Object

We know that physical space has three dimensions, it means, we can move in three mutually perpendicular directions. But despite that, there is another basic motion coming from subjectivity (unity, internal side) to objectivity (diversity, external side) and back again. This motion represents a self-reflection as negation of negation.

The fourth (spiritual) dimension is given by the motion from inside to outside, from the unity to diversity, from subjectivity to objectivity and back again – as a self-reflection. It is the motion of higher quality than other physical spatial motions, which are only aspects of this basic self-reflecting motion where everything is reflected in everything creating instantaneous non-local communication of everything with everything. We cannot study the essence of Consciousness not knowing the exact mechanism of the Unity Principle.

Consciousness is a self-closed system of high complexity where everything communicates with everything non-locally creating thus the unity of conscious subject.

The Unity (subject) negates itself through its objectivity (internal structuration) though which it again reflects to its Unity (negation of negation). The self-reflecting Unity, in which everything is reflected in everything else, means that the whole reality is a self-closed, self-creating, self-reflecting, self-aware and self-knowing system of the highest complexity. The relation between subject and object is, at the same time, the relation between inside and outside, one cannot exist without the other. The physical Universe has not its own centre, which is everywhere, in it is self-reflecting Unity (subjective side), where everything is just HERE and NOW.

The Universe in its self-reflecting simultaneous Unity represents the subjectivity of personal GOD creating its objective side by internal differentiation and structuration (space and time) through which He again reflects to His Unity (subjectivity).

The whole reality as well as human being represents a multilevel system consisting of relatively separate complex structures made of elementary quantum dipoles of different intensity, but mutually interconnected, as everything is connected to everything. Our body-soul, as well as the whole Universe, consists of the following hierarchical levels made of quantum dipoles of different intensity:
- biophysical and vegetative
- sensual (astral)
- mental (intelligence)
- spiritual (self-consciousness – emotion, mind and free will)
The essence of immortality of our spiritual and mental soul together with its astral body is explained in my papers [13], [15] by analysis of entropy and syntropy. While local mechanical interactions (repulsive pressures of quantum dipoles) are manifested by the law of entropy (dissipation, disintegration, disorder and destruction) non-local quantum connections are responsible for the dominant role of the law of syntropy (differentiation, structuration, growth of complexity, life, consciousness and creation). The death of biophysical and vegetative body is a consequence of superiority of entropic destructive processes over syntropic ones. Quantum superstructure of vegetative (ethereal) level is not enough strong to prevent the destruction of biophysical body. Quite different is the situation regarding our spiritual and mental soul together with its astral (sensual) body. Our soul represents a self-closed quantum structure of high complexity made of very subtle quantum dipoles mutually interconnected into the indestructible unity (our subjectivity and individuality), because the mutual local repulsive pressures (entropy) are so weak that cannot destroy our spiritual soul. At this quantum level the syntropy plays the dominant role guaranteeing our immortality. The soul frees its close quantum connections to the biophysical body after its death and starts to act at higher and more subtle levels of physical reality unreachable now by our corporal senses.

**Conclusion**

From the viewpoint of dialectical logic contemporary theoretical physics failed fatally in all its aspects. Now, when the Unity Principle is disclosed, new science can start its consecutive development on true fundamentals. The knowledge of the Unity Principle and its manifestations is a basis for new science including theoretical physics, biology, sociology, science of consciousness as well as philosophy. It represents a new scientific and philosophical paradigm and starting point of substantial great revolution in human knowledge giving true answers to all basic questions of our existence.

**References**

[1] Peter Kohut, God and the Universe, VDM Verlag Dr. Muller, Saarbrucken 2011
www.amazon.co.uk/God-Universe-Revolution-Peter-Kohut/dp/3639331044

[2] Peter Kohut, Theoretical Physics in Crisis
http://www.worldsci.org/pdf/abstracts/abstracts_5375.pdf

[3] Peter Kohut, E=mc² and Einstein’s failure

[4] Peter Kohut, Black Holes do not exist

[6] Peter Kohut, The Bipolar Structure of particles and interactions

[7] Peter Kohut, The Basic Space-time Equation of the Universe
www.worldsci.org/pdf/abstracts/abstracts_5367.pdf

[8] Peter Kohut, The Cosmic Expansion and its Consequences
http://www.worldsci.org/pdf/abstracts/abstracts_5366.pdf

[9] Peter Kohut, The Unity of Newton’s and Coulomb’s Laws
http://www.worldsci.org/pdf/abstracts/abstracts_5377.pdf

[10] Peter Kohut, The Nature and Speed of Light
http://www.worldsci.org/pdf/abstracts/abstracts_5378.pdf


[12] Peter Kohut, Quantum Entanglement, its Nature and Manifestations
http://www.worldsci.org/pdf/abstracts/abstracts_5379.pdf


[15] Peter Kohut, Crisis of Contemporary Theoretical Physics and the Truth

[16] Dominique Surel, Controlled Remote Viewing – A Transformational Experience
