ESSENTIALS OF SPECULATIVE PHYSICS

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Abstract. The author concludes infinity of any physical object and proposes a simple instrument for the search of such infinity. The criticism is put on the concepts, putting the essentials of the world on the experimental level.

Keywords: infinity, infinitely small unit, significant level.

ESENȚA FIZICII SPECULATIVE

Rezumat. Autorul ajunge la concluzia că orice obiect fizic este infinit și oferă un instrument simplu pentru studierea unei astfel de infinități. Sunt criticate conceptele care consideră bazele creării universului disponibile experimental.

Cuvinte cheie: unitate infinitisimă, infinit, nivel semnificativ.

I will begin the story from the Universe. Currently the Big Bang is accepted as being the beginning of Universe. Nevertheless, we know that explosion may proceed in different finite volumes — grenade, star, etc. - whereas its application to the Universe is contradictory to classical philosophy would require further proof. As far as I know, it was reduced to self-conviction, by replacement of the term of "Meta-galaxy" with "Universe".

All that we really know about the Universe is that it is united. As I will show later, there is no void. Therefore, such unity is not formal but physical. At the same time the Universe is composed of galaxies, stars, planets, humanity, etc. Hence the question follows: why does it not represent the only existing basic unit — a clot of the being?

The explanation perhaps is that the being is characterized by greatness. This implies that it should be greater than anything existing inside it — and this lesser part should be separated in reality, i.e. physically. Because any part of the being is great by itself, it should be greater than its own parts. Hence, both the Universe and its subdivisions are infinite and, furthermore, unlimited (without boundaries). Thus, when our hand touches a table the distance between them equals to 0 centimetres, millimetres, microns and so on, up to the level of the given smallness, where a transitional zone, common to both hand and table exists. The finite object in effect has foreign contacts, whereas the Universe is deprived of them.

The supporters of the infinite Universe, as a rule, emphasized absence of its centre, since in the finite objects it is a "point" with equal distance to boundaries. Nevertheless, the boundaries of a finite object are not contained inside it. Hence, distances to its ends in fact are distances to other beginnings. The Universe contains all the beginnings. It has no indivisible centre, but it possesses central regions, touched with equal subdivisions of the Universe. The other explanation is that the Universe represents elements. Its centre has no greater physical significance than that of the Pacific Ocean.

From the infinity the unity of the being follows, as well as the contrary of this unity — multitude. Each component of the being is divided. Such duality leads to uninterrupted fight between unity and multitude, the individual and the elements (the spontaneous actions of the environment), realized through movement. The same struggle occurs in our mind. Hence the conclusions of Parmenides and of Spinoza that the unity is indivisible [1; 2, p. 371, 372] and even is deprived of motion [1].

The most prominent example of such a fight is the organic life. From the standpoint of hydro- dynamics it would be considered an absurd, that part of current would swim against the main flow, moving not by surrounding whirls, but by its proper interests. But a salmon, swimming upstream is the complex of streams, separated from the surrounding flows.

Had the movement been reduced to the mere displacement, the Universe would be represented by currents and whirls. Yet, there are the so-called solid bodies, that tend in an active way to preserve their constant greatness. The existence of such constant values confirms the above conclusion about the fight between unity and multitude, realized by the means of movement.

I call the level where the constancy is preserved, the significant level. Despite its infinite foundations it is finite and may be clearly shown by the limitation of our own senses. Accordingly, transitional regions are shifted to an under-significant level. As a result, we perceive clear boundaries of bodies. In fact, the so-called solid bodies are kind of living organisms and the tendency to preserve the constancy is the property, which was accepted by zoologists as the instinct of self-preservation.

The reduction of movement to displacement led physicists to a conclusion that the process of a growing disintegration is predominant in the Universe [3]. According to this concept, the final result that the Universe is heading towards, is its exhaustion of its heat, when atoms are dispersed evenly in a volume as a result of equal temperatures.

Replacing atoms and heat movement with basic properties of the being, we will receive that both the matter and movement are uniformly distributed at any time in any volume. So for the coming death of the Universe its eternal life was taken. From the fact that the Universe is deprived of external energy sources, it follows that it cannot be converted in an integral value with its closed flows. Components of the Universe are distributed chaotically that do not imply their further total destruction.

The conclusion about the infinite nature of any being, contradicts the notion of infinity as a number, greater than any other, which is implicit.

Thus, the atomists of ancient India argued that "The hypothesis about infinite divisibility...is clearly absurd, since it contradicts certain immediately considered facts. One cannot debate which is greater by value – a high mountain or a small grain. Nevertheless, according to this hypothesis, a mountain may be divided into an infinite number of parts, i.e. this implies that a mountain consists of an infinite number of parts.

But the same could be said about a grain. Hence, both mountain and grain consist of infinite amounts of parts, and therefore, they may be considered to be equal in size." [4, p. 292].

That is the antithesis of infinite divisibility. The synthesis of the theoretical statement about infinite divisibility and visible differences in the size of objects, is that infinity is not the greatest amount, but the **ability of any component to be composed.**

Kantor, in turn, demonstrated the equality of two infinite sets, whereby one of them is part of the other. Let us consider, for example, a set of all natural numbers and a set of all natural even numbers. Two (2) of the second set corresponds to 1 of the first set; 4 – to 2; 6 – to 3; 8 — to 4; 10 — to 5; 12 — to 6, etc., ad infinitum. [5, p. 105]. It seems more natural to write in correspondence 2 to 2; 4 to 4; 6 to 6 and so on. Nevertheless, in that case the author would not obtain the result, which he seeks to prove. Furthermore, in effect, we are dealing with two "finite" sets: {1, 2, 3, 4, 5, 6} and {2, 4, 6, 8, 10, 12}. Each element of the second set is twice greater than the corresponding element of the first set. Since $2 \times \frac{n}{2} = n$, the number of the second set (6), corresponding to half of the first set (3), will be equal to the finite number of the first set. The three late numbers of the second set are beyond the limits of the first set. If the amount of numbers in the sets is odd, i. e., 5, the number of the second set corresponding to the middle number of the first set (6) will be greater than the finite number of the first set by one. Then more than half of the numbers of the second set will be beyond the scope of the first set and cannot be its part, in spite of Kantor's idea.

Kantor also came to conclusion that an infinite set, composed of subsets of any infinite set, is greater than the latter [5, p. 111 – 122]. I consider the conclusion concerning the inequality of infinities as a progressive step; nevertheless, the method of demonstration, in my view, is mystical. Let us consider two "finite" sets: on one hand, the set {1, 2, 3}; on the other hand, a set composed of its subsets: {∅, {1,2,3}, {1}, {2}, {3}, {1, 2}, {1, 3}, {2, 3}}. It can be seen that the unit from the second subset is identical to those from the third, sixth and seventh subsets. I.e. one real unit corresponds to the four on record. The same applies to the other elements with the exception of the empty set. This conclusion may be tested empirically, employing three matches. We may group them in different subsets, and the set, comprised of said subsets, will be the totality of all combinations (i.e., the total time), but in each combination the amount of matches will be not greater than three. I.e., a one-to-one correspondence exists between the set, composed of subsets of the given set and the given set. It may be seen, however, that curly brackets have a real physical meaning. There are unequal distances between matches, boxes of matches, etc. Taking those objects into account, the absence of a one-to-one correspondence may be concluded.

Such exercises by mathematicians begets among physicists a mistrust towards infinity. Hawking writes: "Because mathematics cannot really handle infinite numbers, this means that the general theory of relativity… predicts that there is a point in the universe where the theory itself breaks down" [6, p. 46]. Thus, relying on the concepts of his predecessors, Hawking accepted even their faults as signs from above.

A different approach was used in the paradigm of elementary particles. The latter does not follow from mere empirical facts. In his Nobel lecture Dirac only expressed his hope that micro particles are in reality elementary and fundamental [7]. Such an approach, coming to the ancient atomism, apparently explains the same chemical and physical properties of substances even outside the Earth. Hence, the same sizes of particles and intuitive conclusion that they are found on the most basic level.

Nevertheless, during the struggle between the unity and multitude, the latter tends to equalize the sizes of its components. Such a peculiarity belongs to the philosophical foundations of physics. Thus, the grains of sand in a given locality or drops of rain at a given time are near in size. The spontaneous processes of evolution led to the similar sizes of the living being of a given affinity. The standards of measurement emerged as a result of spontaneous processes in the market, i.e. the approximately equal sizes of particles may be explained by huge spontaneous processes, preceding the Great Bang. Nevertheless, as the author suggests, the Universe is infinite and outside of our meta-galaxy there are substances that are not composed of electrons, protons and neutrons. In such a way, micro-particles may be divisible, as "atoms", grains of sand, drops of rain, etc.

In regards to the conclusion that "the particles of each type of being are all <u>exactly</u> alike" [7], it follows rather from the concept than from the direct empirical evidences. It may be noted that the relation of the image of an electron to the particle itself (of the order of 10^{10}) is thousand times greater than that of the Earth to man (of the order of 10^7). Furthermore, the image is formed not by the thin agents (like the light for bacteria, not for viruses!), but by the same particles or even by more coarse agents e.g. molecules of water in a Wilson chamber. Therefore, the details of the image of particle should be undistinguishable.

According to the accepted formula of division to infinity, $\lim_{y \to \infty} x : y = 0$, the final result of such division would be meaningless. Nevertheless, this formula is of applied character, hence, it does not deal with infinity, but with applied notion of an innumerable amount.

The limit to an infinitely divided object is not mere infinity, but the infinite totality of its components and only them.

Dividing such an object physically, we would obtain a given volume of an absolutely unstructured matter. It would be impossible to study it physically, for existing equipment has limited sensitivity.

However, it is possible to measure it otherwise, accepting infinity for a definite amount. In this case we obtain $\lim x : \infty = x : \infty_{x \neq y} = x : x = 1_e$, where 1_e is the elementary or infinitely small unit, which is indivisible further.

From the infinity, the function, determining co-existence and not coincidence of its components, follows. Infinity suggests at least one direction. Let us then add infinitely small units to a given one. As a result, we would obtain two contrary directions. The point is that co-existence is mutual. Not only the considered unit co-exists with the added one, but also the added ones with the first one. Hence, totality of two mutually defined contrary directions or dimension.

The unit in unidimensional totality represents a segment with an elementary length. Zero boundaries between the neighbor units are dots. In order to come from the infinitely small to the infinitely composed level, it is necessary to replace zero boundaries on self-identical transitional regions.

Units are impenetrable: no unit could penetrate the other one and to form one unit that equals the previous two. The same is true for real volumes. Hence, abstracting from the matter we will obtain its most basic properties.

As was said above, the real values are separated via movement. The moving unit would divide unidimensional totality on the rear and the fore sub-totalities. It cannot enter in the fore unit; and it cannot shift all the totality of units. In order to allow the considered unit to pass, the fore one should move aside. Hence, the second dimension. The unit in the second dimension represents a square with zero boundaries of two orders.

It is remarkable that the infinitely small unit that had a prototype, mathematical atom, was rejected at the end of 17th century. The use of an atom caused difficulties, first and foremost, in geometry. Thus, Kepler did not succeed to express sectors of a circle in atoms [8, p. 46]. Cavaglieri used atoms to calculate a pyramid volume. In order to avoid grave errors, he was forced to apply different methods [8, p. 50 – 52]. Trying to express an angle in infinitely small units, I found that it represents by itself a two-dimensional totality. Lines composing it should, therefore, possess the second dimension or to be unidimensional boundaries of two-dimensional bases. Accepting the width of a line for infinitely small unit, we will find that it is dissected in the apex. This means exaggeration of the internal content, hence, absence of curves and oblique lines, hence, curved space on the basic level. The observed bending of light near stars is the result of gradual diffraction. Such a phenomenon with its corresponding explanation was predicted by Newton in the case, where there is no void [9, p. 350].
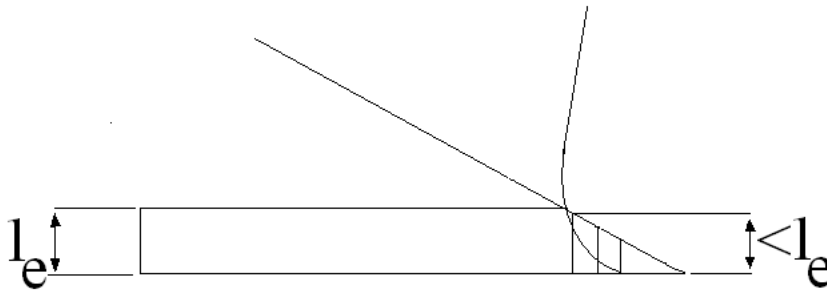
Figure 1. The section of an angle

The same conclusion emerges from the paradox of Democritus. Let us place the cone section parallel to the base. Are its surfaces equal to one another? If they are equal, then the parts that are close to the base are not different from those close to the apex, thus, forming a cylinder. If they are not equal, the cone cannot be created anew. Instead of a smooth side surface, a step would appear [10, p. 240].

Democritus proposes a choice between two contraries. In effect, both of them are true: there are many steps, and each of them, as analysis indicates, is cylindrical. Nevertheless, the synthesis is not enough. Applying the same reasoning to longitudinal sections, one will receive a totality of cubes, in which volume is measured.

That is the solution for the infinitely small level. In practice, on an infinitely composed level, there is no basic cube that forms all others. There are no ideal smooth surfaces. On the infinitely composed level surfaces are exchangeable in transitional self-identical regions. The display of dimensions here is not static, but a dynamic one. There are six infinitely composed directions, forming three dimensions, in which the totality of all movements occurs. Hence, the dimensions by themselves are fluid, therefore, space, composed of them cannot be void.

The Universe, like a common constant value, has a definite shape. The difference lies in the absence of external contacts in the former. Nevertheless, we usually define a shape by external boundaries. Here the approach should be changed. The ideal skeleton of the Universe (assuming a three-dimensional space) consists on three mutually perpendicular planes. On the real level three perpendicular overlapping regions correspond to them. They would possess any real width (i.e. one micron or one parsec). At the limit, they will fuse and form a cube, which is the shape of the Universe. In this cube there not will be definite planes, ribs, tops. Therefore, it should be called cuboid.

In a two-dimensional totality, the maximal width of the moving value would equal 2_e infinitely small units. Otherwise, the units found opposite its middle cannot pass from the fore sub-totality to the rear one. On the hand, the real value is infinitely composed, i.e. sufficiently greater than 2_e.
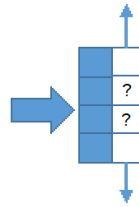
Figure 2. The problem of the two-dimensional totality

Thus, on the infinitely small level the third dimension provides the necessary condition for the movement of a value, wider than 2_e.
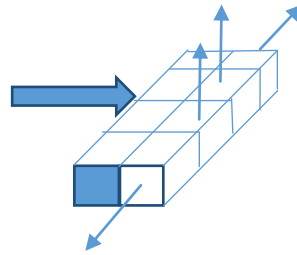

Figure 3. Conclusion of the third dimension

Nevertheless, the third dimension is infinitely composed as well, i.e. sufficiently greater than 2_e. This means that no moving object may circumvent a given one. Nevertheless, the lesser values penetrate the given one without destructing it, which would be impossible in a two-dimensional totality. Thus, any moving object, including micro particles, is represented by a penetrable net from the proper structures on infinite totality of levels.

As far as regards the fourth dimension, Minkowsky assumed that it is time. The scientist came to that conclusion from the statement of the theory of relativity, that both time and length are altered in an equal degree, but in opposite proportionality. Arguing the unity of space and time, Minkowsky equated the latter to ordinary dimensions of space [11, p. 167], abstracting from same its properties as currency and irreversibility. Furthermore, he proposed to represent the resting point as a line, parallel to the axis of time; a uniformly moving point, as a section, inclined to this axis and its uneven motion as a curve [11, p. 171]. Thus, Minkowsky translates dynamics into statics. In my view, this is connected to contradictions within the motion. As a result, it was rejected by the ancient Greek school of Eleates, to which Parmenides and Zeno belonged.

On the other hand, as was shown above, all dimensions are dynamic. Hence, time is a component of all dimensions, and is not separate from them.

Therefore, the first dimension represents the direction of the movement of a given value; the second dimension, the being of the value; and the third, the way for the values of lesser significance. It is likely that the number of dimensions are manifested by these conditions. Nevertheless, it may be that the author missed some causes for additional dimensions. It could be noted also that the most flattened organisms have tentacles or a bending of the body in the third dimension. The same would be true if the additional ones would exist.

The special theory of relativity relates to the time factor as the fourth dimension of space. Nevertheless, the physical time is the measurements of changes, which may be reduced for alteration of spatial components. Similarly, time is the length of all the components in all three dimensions rather than a separate dimension.

Time has also a historical and philosophic aspect. When I researched it, I came across a criticism towards the principle of uncertainty in Quantum Mechanics. As noted above, the agents, forming an image of a particle, are too coarse; Furthermore, they move in the nearest (or even sufficiently lesser) speed. The image of a particle will be inevitably blurred. Turning to the literature, I found a confirmation to such a conclusion. Thus, Bohr, responded to the criticism of Einstein: "Indeed the *finite interaction between object and measuring agencies* conditioned by the very existence of the quantum of action entails — because of the impossibility of controlling the reaction of the object on the measuring instrument if these are to serve their purpose — the necessity of a final renunciation of the classical ideal of causality and a radical revision of our attitude towards the problem of physical reality" [12]. In such a way, the theoretician is guided by responses of instruments, whose shortcomings, comparing with organs of senses are obvious for himself. Nevertheless, the given concept poses a question: does certainty exists in the ever changing world? The answer could be given with the help of infinitely small units.

The position of an infinitely small unit is defined at zero boundary between two infinitely small moments. In this interval its movement is not defined. During the infinitely small moment the unit changes its position in relation to other units. It cannot be in the past position that was abandoned; it cannot be the new position, where it has not yet arrived; It cannot be between them either, since the infinitely small unit is different to the zero boundary. Hence, the basic principle of uncertainty.

Passing from the ideal infinitely small level to an infinitely composed reality, we should exchange zero boundary at self-identical transitional intervals. Here totality of movement is defined as the totality of positions and vice-versa.

The infinitely small unit symbolizes the significant level, existing in reality. Here, uncertainty appears again. Thus, during a second of a flight of arrow, we cannot establish its position. During a thousandth of a second, its position is defined, but the movement is uncertain. During a millionth of a second, the organic life is uncertain: there are no blood currents, mental processes and the like. During 10^{-20} of a second, the positions of electrons should be certain. This means they do not reproduce the shapes of macro objects. In this period of time the latter are not separated from their surroundings. Nevertheless, during the 10^{20} part of such periods the objects are displayed as distinct ones. Hence, the relativity of simultaneous events that is determined, in my opinion, by separation of significant levels rather than by a constant speed: non simultaneous turns of

electrons are simultaneous for us, because they are merged to a single moment of our life. The present time is subjective, not because it is illusory, but because it is individualized.

In the absence of void, I argue, there are no elementary charges which are the distant action, ideally polished up until they no longer resemble their prototypes. In the absence of void, interaction between particles is caused not only by their internal forces, but by the relation between these forces and medium between the reacting particles and behind them. If the medium in the interval between the particles (stars, planets) is greater than their own force, repulsion takes place. If particles are stronger, they oust the medium from the interval between them, the latter accumulates behind them, and pushes them one toward another. In the state of equilibrium movement by a stable orbit may arise. I suggest that the latter is the result of the movement of the whole system. Since the totality of matter cannot be shifted the movement proceeds in closed trajectories composed of clouds of smoke. These types of interactions, including the latter, may obviously be observed in material medium, e.g. in water.

The other category, which, in my opinion, is the result of a conflict between notions and which cannot exist in the absence of void, is anti-matter. Such notion was received by Dirac, who grounded it in the fact that we can calculate the square of particle's energy. Hence, two values of energy may follow — positive (e.g. normal) energy and negative [7]. It is worthwhile noting that in classical physics, negative energy is not absolute, but a relative one; that is the negative energy directed against the work under consideration. Here, in contrast, relative characteristics are claimed to be absolute. Let us assume that a particle with negative energy collides with a particle with positive energy. Their energy should be eliminated, and both particles should stop their movement. Nevertheless, here the other antinomy (matter and antimatter) is introduced. It is considered that during a collision of an electron and a positron (antielectron) they annihilate and emit two quanta of instant energy[1] (photons). The only difference between an electron and a positron is the sign of their electrical charge [7]. Exchanging the charge with alternating distant actions, we will receive that the same particles can both attract and repulse one another (as man does). Then the so-called annihilation is no more than resilient collision, and electrons, positrons and photons are in fact the same particles.

The relativity of simultaneity, that I discovered, was postulated earlier by the theory of relativity, and is grounded on the acceptance of an absolutely constant speed of light. Such conclusion followed from the null result of the experiment of Michelson-Morley, which refuted the statement that the light is a wave of an immobile ether — hence, the absolute speed of Earth would be calculated by the sum of light waves. It was disproved also that the light-bearing ether is moving within the Earth [13, p. 175–186] — though the experiments, carried out earlier, e.g. experiment of Fiseau showed that the speed of light is dependent on the speed of the medium. These negative results led Einstein to the conclusion that the speed of light is constant and maximal. Nevertheless,

as Langevin notes, "If we preserve the absolute meaning for the equations of rational mechanics…, it is necessary to reject the perfect synthesis, and to return, for example in optics to… corpuscular theory with all its difficulties" [14, p. 457]. Einstein, not only formulated theory of relativity, but also restored the corpuscular view of the nature of light.

Then, the null result of the experiment carried out by Michelson-Morley may be explained by preservation of the speed of Earth by photons — as is the case with any other object in the system. In practice, if the experiment of Michelson-Morley will be carried with the sources of light moving in different speeds relative to interferometer, then the light emitted from them, due to Doppler effect will reach the device with different wave parameters, and the result of such experiment would not be null.

If a photon is infinitely composed of circulating streams, their speed should be greater than the so-called speed of light. We may be reminded, that according to Cherenkov effect, the speed of an electron in a concrete medium may be greater than that of light. Taking into account that there is no absolute void, such result should be extrapolated to any existing medium. I tried also to refute any upper limit for speed, and also found it.

If movement is a struggle between multitude and unity, it is found in an equal degree in any equal volume of matter. Then the upper limit of speed is the speed of the processes totality.

It may be clearly seen on the infinitely small level: during an infinitely small moment an infinitely small unit could make one pass only. The conclusion about the upper limit of speed follows both from the Zeno paradox "Achilles and the tortoise". Accordingly, if Achilles stays behind the torture, he will never catch up with it, because when he overtakes the distance between him and the tortoise, the latter increases the gap between them by a certain distance [15, p. 144]. The solution, proposed by contemporary mathematics, is that the infinite sum of numbers is finite [16, p. 87]. Nevertheless, a finite value is routinely added to this sum. The run may be expressed by the formula

$$l_{n+1} = l_n - l_n(A) + l_n(\text{tort}).$$

Since Achilles passes all the distance, $l_n = l_n(A)$; because $l_n(\text{tort}) = \dfrac{l_n}{const}$ (where

$const = \dfrac{l(A)}{l(tort)} = \dfrac{v(A)}{v(tort)}$), $l_{n+1} = \dfrac{l_n}{const}$ If $l_0 \neq 0$; l_n is also different from zero for all n.

Furthermore, Zeno admits that Achilles gets close to the tortoise. If we ask the following question: can Achilles reduce an initial distance of a value as small as we please (meter, centimeter, micron etc.)? — we will obtain a negative answer.

In order for Achilles to reach the tortoise, the latter should stay put. Hence, speeds difference is explained by the distinction of the longevity of the stopping points. Any onward movement is based on an oscillating movement of an object. Such conclusion

follows from the consideration of objects, which move one relative to another. There is no system, in which they will move with the same speed in the same direction. Hence, their relative displacement is grounded in the absolute difference of their states. This distinction is characterized by value, sign and by recurrence (due to which moving object may be considered as resting), i.e., the objects are displaced due to a regime distinction of an internally directed oscillation.

If both Achilles and the tortoise would spend all their time on moving forward, their speed would coincide with physical time and would be equal to the speed of the processes' totality. It is natural that in the given case they would not approach. It is also necessary to note that the internal processes (blood circulation, rotation of electrons) that form "bodies", make such a speed an unreachable limit for movement. Accordingly, each value of speed, nearing either an upper or a lower limit, causes different states, mentioned by the theory of relativity as a special effect. It is natural that such effects may exist only if there is an absolute value for speed.

The notion of a photon approaches to the Newtonian notion of a light corpuscle. Nevertheless, this approaching is not absolute, since, as was mentioned above, the photon is considered a quantum of energy [13, p. 275, 313].

This idea contradicts the empirical facts: the value of the kinetic energy varies in different photons (photon of red light is weaker than that of violet light, which, in turn is weaker than ultraviolet light etc.). So, the energy cannot be expressed in quantity of photons. The photon should be not quantum of energy, but its material bearer[2].

It is remarkable that both Plank and Einstein were not satisfied with the given notion of quantum of energy. Initially Plank argued with Ostwald, who wished to reduce all physical phenomena to pure energy. It is a known joke of Einstein, who compared quanta with a pint of beer: if beer is sold in such quantities, this does not imply that it exists in pints only.

Hence, we can assume that both Plank and Einstein were influenced not by empirical facts, nor by their initial ideas, but by a more powerful concept. Such concept could be the concept of light, where light is considered a wave, bearing energy and not matter.

I think that this was an additional concept, convincing both scientists in the existence of quanta of energy, and this is the concept of elementary charge[3], according to which an atom has a limited number of relatively small permanently charged particles. So, the photon, emitted from the atom was perceived as a portion of pure energy and not as its material component.

The utmost result of the preference of the multitude over unity is the relative void. This is the level where multitude predominates components that the display of their being tends to disappear. The example is the air, whose physical properties are neglected in the daily practice. The same regards to regions, where the being is undistinguishable by

artificial organs of the senses — physical apparatus. Let us remember that the words "void" and "vacuum" (in Latin) were not introduced as scientific terms, but appeared spontaneously in the process of language development.

Such region serves not so much for a multitude and its composing, but rather to values of greater significance as their potential reservoir, providing their separation one from another, possibility of their relocation and also as a means of remote action between them. Hence, formation of the super significant level. In such a way, with the growth of multitude preference over unity in the totality there are predominate auxiliary functions.

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Comments

[1]Some sources argue that the weak annihilation may yield one quantum only. In a private conversation, the famous Israeli physicist Yuval Ne'eman advised me that the number of emitting photons, as a result of annihilation, always equals two.

[2]Taking into account that the rate of movement per volume unit of matter is constant, therefore, the entire amount of energy in photons should be about the same value. The energy is distributed differently in internal levels of photons with different kinetic energy.

[3]Consideration of phenomena of a micro world through the concept of elementary charge, led to the presentation of an □-particle as a complex of two protons and two neutrons, whereas in experiments it behaves as a monolith.

[4]The book was released with the orthography of the XVIII century.