

Paper Title: Scientific Picture of the Word in the Last 25 Years: Basic Change of Spiritual Prospect

Author: Tsekhmistro, Ivan,

Institutional Affiliation(s): Head Theory of the Culture and Philosophy of Science

Department, V. N. Karazin Kharkiv National University and Head of the Local Society:

East Ukrainian Center of Science and Religion, Kharkiv, Ukraine.

This paper was prepared for *Science and Religion: Global Perspectives*, June 4-8, 2005, in Philadelphia, PA, USA, a program of the Metanexus Institute (www.metanexus.net)

Abstract:

Foundations of quantum mechanics raise two important questions: (1) why probabilities are primary in the description of a physical reality; (2) why these probabilities in a so-called pure quantum condition are perfectly correlated as were confirmed in the EPR-experiments¹.

Both can be solved in a testable way by the general relativistic approach in physics on extremely common concepts of "element" and "set". Relativization of the concepts "element" and "set" means that finally the world exists as an indivisible whole. Its accuracy corresponds to a quantum picture of the world. As quantum systems in a so-called pure condition cannot be completely spread out on sets of elements, we are compelled to describe them in terms of potential possibilities of allocation of such elements and in terms of the corresponding probabilities representing their (i.e. quantum systems) objective-real structure.

On the other hand, this quantum property of the world as indivisible whole appeared responsible for *implicative-logic* properties of structure as generated by its potential possibilities of quantum systems that has found strict confirmation in the mentioned quantum-correlation experiments. The reduction of wave function and quantum-correlation effects are trivial consequences of the implicative-logic organization of potential possibilities in quantum systems. These effects have neither physical-causal, nor material, but relational nature and are generated by changes (owing to measurement or physical interaction) in the structure of relations of mutually supplementing sides of reality.

We conclude that:

(1) The world actually is not mechanistic or just physical-causal (like a clockwork).

Regarding the relation to mechanistic-physical-casual side of the world, there is its remarkable additional logic-mental side submitted by a layer in its basis of quantum potential possibilities in which quantum-correlation implicative-logic by nature effects are developed. The natural basis of this additional world is the surprising side of the world as the indivisible unit, shown in the deepest basis of it - in a so-called subquantum level.

(2) In this new picture of the world a person appears the fundamental, ineradicable and essential phenomenon of life, more fundamental, more ineradicable and more

¹ The first letters of surnames were taken of three authors proposing a layout (in the beginning it was purely abstract experiment) in a famous article of A. Einstein, B. Podolsky and N. Rosen 'Can *Quantum Mechanical Description of Physical Reality Be Considered Complete?*'

essential even in comparison with the religious doctrine about his occurrence in the world at the will of the divine.

- (3) The quantum picture of the world always assumes and always keeps in itself an opportunity of the person by virtue of presence in a fundamental basis of the world of mental implicative-logic structures of potential possibilities (and representing them in quantum mechanics of probabilities), which are completely identical to implicative-logic structures of thinking and consciousness of a person and regarding which we are the real *similarity* (: “And the God created a man by his image and similarity”).

So, now the development of science itself fertilizes the modern culture with new concept of spirituality. In this way, we can hope to find a new vision of the world and our destiny in it. Though this development will demand the creating of new language, it also needs new ideas, a new worldview, and a new understanding of humanity that is in accordance with contemporary science and takes into account new investigations of spirituality.

Biography:

Prof. Ivan Z. Tsekhmistro:

Education

Kharkiv National Karazin’s University, Ukraine – Doctor of Philosophy Science, 1977.

Kharkiv National Karazin’s University, Ukraine - Candidate’s degree of Philosophy Science, 1966.

Kharkiv National Karazin’s University, Ukraine - Ingeniring, 1959.

Professional Employment

Head of Theory of Culture and Philosophy of Science Department, Kharkiv National Karazin’s University, 1990 - present.

Professor of Philosophy Chair, Kharkiv National Karazin’s University, 1980-1990;

Assistant Professor, 1966-1980.

Post-graduate of Philosophy Chair, Kharkiv National Karazin’s University, 1962-1965.

Engineer, senior engineer in Sibgiprotrans, Novosibirsk, 1959-1962.

Grants and Awards

Honored Scientist of Ukraine, 2002 (assigned by President of Ukraine).

Honorary Karasin’s Grant of Kharkiv District State Administration, 1999.

Participant of the International Seminars on Study the Western Philosophy and Education, 1992-1997. (Grants from the International Soros Foundations in Ukraine).

Professional Service

Editor-in-Chief of Journal of Kharkiv National University, Series: Theory of Culture and Philosophy of Science. 1990 - present.

Member of editorial board of scientific Journal “Philosophical Thought” of Ukrainian Academy of Sciences. 1998 - present.

Academician of Academy of Informatics of Ukraine. 1992 - present.

The chairman of scientific council on award of a scientific degree of the doctor of philosophical sciences. 1992 – present.

Paper:

Problem of spirituality

To clear a problem of the person as central and to achieve understanding of each type of spirituality in a history of culture is a problem of philosophy as theoretical system of outlook. As a whole in spirituality structure of culture, roughly a bit, it is possible to allocate two components. First of them is a vertical one. It is the attitude of a person to absolute: to the God, Nature, Truth, or - if anything from named is not believed in - then to a great secret of life, and nobody could avoid a question about it.

The second component is horizontal: in it the world of attitudes of one person to another is represented. An internal ratio of these two components in structure of spirituality in various historical types of culture is miscellaneous. Thus, in advanced monotheistic culture everything appeared subordinate of a vertical constituent, just like Gothic style in architecture. The opportunity of existence of an individual and all wealth of his spiritual world are completely determined through his attitude to absolute - to the God or Truth. This is the sense of well-known "Confession" written by Augustine. We can admit that finding the god in the nature and in yourself and intense dialogue with him had been a source of powerful, unprecedented rise in culture practically in all its spheres. Even great creators of a classical science - Galileo and Newton - and during absolutely other historical epoch: New time, quite sincerely considered, that all sense of their activity is reduced to solving the mathematical task, according to which the god had created the nature.

As to a horizontal component, in Christian culture it, in effect, entirely derivative from vertical. But it does not mean unimportance of its contents. On the contrary, the love to next person came from necessity to love for the god, and its scales were determined by depth and force of love to the god and belief in the god.

Crisis of mechanicism and rationalism

But little by little development of a science and realization of ideals of Enlightenment century and a century of Reason have resulted that nothing remained from the former powerful vertical component in spiritual culture of XX century. Is it a source of crisis of modern culture and obvious inspirituality of a modern society? And how has it happened?

Natural result of the establishment of Enlightenment and Reason century ideals was a scientific rationalism, which had reduced a vertical constituent in structure of spirituality to a recognition of objective material law in the nature, and a horizontal component - to social law. In Marxism is a well-known concept of "natural-historical law of social development" and a determining role of society in relation to an individual. A well-known sixth thesis of Marx about Feuerbach without any subtlety affirms: "...The essence of the person not is abstract, inherent to a separate individual. In reality it is a totality of all public attitudes". To some degree you can't help but agree with it. The trouble, however, is that in full conformity with ideals of scientific rationalism it is supposed, that this essence of a person as totality of public attitudes is possible to calculate. And in definite ways changing public attitudes to change a person himself.

As a result, small before the god, but great with his correlation with god, a person of Augustine had turned into absolutely ordinary marginal person - epiphenomenon of

spiritless forces of nature and society. And this new and in effect casual and lonely in the world person also behaves in appropriate way. He does not search any more, like Galileo or Newton, for the divine plan of the universe construction, but treats the nature more likely as a stone quarry: he looks what else it is possible to extract and appropriate out of it.

At the same time there was a striking pauperization of horizontal component of culture spirituality. The rationalistic scientific style of thinking, elaborated regarding the knowledge of bodies of the nature, the person has transferred on itself and on the attitude of people in a society. The concept of natural-historical law of development of a society had formed a basis of promotion of the rationalistic "manufacture of person" program. In practice the most known attempts of realization of this "manufacture of person" program had turned into spirituality of commune living or Bolshevik Party circle. Certainly, the mentioned truths of Marxism had once again triumphed: the totalitarian economic - political system had generated structures of spirituality corresponding to it (to be more exact, of inspirituality).

Within the framework of the Marxist concept of a historical materialism a unique source of spirituality is society. Thus it is overlooked, that society is impossible without consciousness, person, individual. Centering of historical materialism on economic relations, in which the key to an explanation *of all* inner world of society and a person ostensibly lays, inevitably should turn back narrower, reduced only to horizontal constituent of spirituality concept. And from last, strictly speaking, nothing remains because of reducing all social relations to economic ones. That is what had justly been named an economic determinism.

Meanwhile in the XX century J. Piaget's genetic psychology had clearly opened its own ideal properties of mentality and consciousness: ideal, "unentropy" nature of the intelligence operations, completely convertible and grouped into complete structures with implicative connection. These structures give in to the logical-mathematical description, so logic, according to Piaget, should be considered as axiomatic of the generated thinking, and ontologically - as the objective basis of it. J. Piaget also specified a process of interiorization as a real source of these ideal structures of intelligence in ontogenesis of consciousnesses. Certainly, the process of interiorization itself is being developed under rather effective stimulating influence of society.

But what remains not clear is *how* all this is possible in a real material world, due to what its own properties a biological substratum (the brain, nervous system, etc.) appears capable to such functional development during which on functional conditions of this substratum the ideal structures of consciousness are formed, generating in turn all vast world of spirituality of a human being.

Neither in historical materialism, nor in modern science as a whole, nowadays there is no somehow comprehensible answer to these questions, there is no explanation of an origin and essence of consciousness. The known thesis with a certain rational sense "consciousness is the social form of reflection", cannot be considered as means of the decision for a problem of consciousness. Actually in this thesis and the concept connected to it absolutely nothing is said about the ideal nature of consciousness, but only about an origin of the *contents* of consciousness of historically certain type of a person. And the great secret of spirituality of an individual remains completely undisclosed. More than that, modern scientific materialism pulls out an insuperable precipice between consciousness

and the nature, having reduced the last to infinite *multitude* of any physical things (atoms, elementary particles, fields, etc.), absolutely deprived of any properties of mentality or ideality. From the point of view of modern scientific materialism the person is truly or metaphysically *strange* in so understood world. Regarding this we can refer to certificates at first-hand.

The outstanding modern scientist, Nobel prize winner Jacque Mono, turning to a problem of the person, notices, that he sees a person in the universe in full loneliness, in the absolute isolation, living "like a gipsy at edge of the world alien to him, which is deaf to his music, indifferent to his expectations, as well as to his sufferings and crimes". Jacque Mono in full conformity with modern science considers impossible to give a natural explanation of human being's origin and spirituality coming from the chaotic casual world of particles and fields.

The same diagnosis to a condition of modern culture D. Bohm gives in his last publication under the significant title "Science and Spirituality: the Necessity of Changes in Culture". Having addressed to a problem of spirit and nature, he complains: "Now this harmony [of spirit and nature] is lost, the modern outlook at the world is mechanistic. Universe is like a huge machine reminding a clockwork, and the last is reduced to the structure of an atom ... , the more we peer into space, the less we find the bases for sense. There is no place to spirit in it. All is the mechanism. As science approached, the realm of spirit diminished, until it has disappeared completely. As a result the spiritual orientation necessary for the person appeared completely lost: it is possible, that the main reason of illness of the modern society is the sensation of aimlessness or senselessness" of human existence. And as the main contents of culture is spirituality, then not only culture, but also the person cannot remain healthy and integral in the culture that is broken up in its basis and has lost spirituality, and by that undermining the bases of existence of the person: "... in the mechanistic world the person is very lonely, detached and has to care of himself. All of us push each other, and everyone necessarily wants to win".

Another Nobel winner Ilya Prigozhine is anxious about the condition of spirituality of the modern person: "How, he asks, - we, consisting of sets of particles, realize ourselves in the fortuitous world of particles?" "How is it possible? How is it possible, that one set or multitude of particles have come in their development to the ability to learn, understand and realize other set of particles - the world? How is this miracle possible?" This question seems so unsolvable to him in a modern science and culture, that he then asks the following question: whether it is necessary to define a science through the break running between the person and the nature?

What this obvious deficiency of humanity of modern culture, patent defect of attention to the person as such is connected with? Moreover, what this obvious ignorance and misunderstanding of human nature is connected with, obviously *the stranger* in life in metaphysical and culturological sense? With mechanism and rationalism, lying in the foundation of modern culture or rather with the certain type of rationalism: one-dimensional, linear, determinist rationalism. The ideal of this rationalism was Marxist "natural-historical rule ", transforming person into insignificant and actually casual - *strange* epiphenomenon of blind and soulless forces of nature and society. Nowadays the behavior of such person and a corresponding way of his ability to live in global scale represents a threat to his very existence.

The person can live a life without adjoining with these problems, but when under influence of an extreme "borderline situation" he face them, they are followed quite often by unrestrained "metaphysical collapse" - full depreciation and absolute simplification of existence, making life deprived of any spiritual importance, intolerably "material" and burdensomely absurd. This is the end of any spirituality, which is inevitably followed by free disposal of absurdity of life.

As a result there seems to be as though two layers in a problem of person: *the first* - a person is alien among other people, alien and extraneous in the existing culture.

In a basis of this representation (and experiences) the deeper - *the second* - a metaphysical layer lays: a person is alien in existence.

So, in modern scientific picture of the world the person is truly alien, extraneous and strange in metaphysical sense. He is no more, than accidental in nature, his origin, sense and purpose are inexplicable. And if these and similar questions have no sense at all, as firm materialists usually affirm it, they nevertheless do not explain why it is so.

And then a following question arises: whether initially inspirituality of the modern person results from the most "scientifically proved" refusal of similar questions on the person? Apparently, it is so, and the deepest sources of deficiency of humanity in a modern society are in this refusal from so natural and even necessary questions about person. But if this is so, then the last question arises: how to help the person? How to make the person *friendly* in the nature and culture? If not for the decision, then for clearing this question, the reference to a problem of spirituality in science and culture is necessary.

New prospects

Science is not only integral part of culture, but also the most revolutionary and mobile element of it, it is science that buried great, but becoming obsolete religious system of spirituality of the person. But today the development of science impregnates culture by new spirituality, in terms and representations which the fathers of church could envy.

And this new spirituality of a modern scientific picture of the world is somewhat stronger, thinner, more distinct and strongly pronounced than everything that not only domestic, but also a world religious idea was ever capable for, and at the same time, it is poly-variant and deeply individual, in particular it not necessarily demands belief in God, mysticism and other classical forms of religiousness.

Really, the quantum physics has with one blow beaten out ground under three foundations of an old scientific picture of the world: classical rationalism, reductionism and evolutionism.

The quantum physics has demanded comprehension of a *relativity* extremely general in science abstract concept of an element (and *multitude* of elements as well) in description of conditions of physical reality. It means that our world which has obviously plural nature and consists of various elements - objects, nevertheless finally exists as something indivisible and indecomposable on any multitudes of elements, *the whole* and *the one*, not many at all (not multitude). As D. Bomm writes in his "Quantum theory", the universe, including all observers (all of us) in a subquantum level, exists as indivisible unit.

Comprehension of a *relativity* of concept of an element in the description of physical reality entails at once a relativity of concepts of rationalism, reductionism and evolutionism, for each of these concepts *assumes* exhaustive element structure of object. It is not necessary to have a special education to understand that the side of the world from which it appears as a whole and one (not multitude), is obviously extra sensual and inaccessible to any direct empirical verification: in fact, everything that is capable to influence our sense organs (or devices) is plural and particular. Then on what basis we know about the existence of the world as indivisible whole? Only on the basis of the *logic* conclusion following from the analysis of behavior peculiarities of sensually observable elements of reality. To tell the truth, this type of new rationality radically differs from classical excretory (or discourse) rationalism. It is special supreme type of rationality which arises on the basis of denying finding out the relativity and limitation extremely common concepts "element" and "multitude of elements" in description of the nature, and comprehension the necessity of introduction of additional idea about properties of the world as indivisible and indecomposable on multitudes of the whole. Clearly, that together with a collapse of picture of the world as multitudes of elements, also ideas of, reductionism, evolutionism and rationalism (excretory or discourse).

As the nature has such surprising property as integrity and indivisibility on elements, then last elements in its description are not some "elements", but only those or others (in dependence on experimentally set physical situation) *probabilities* of allocation of these elements as relatively (not absolute!) divided and thus not exhausting all the reality in the multitudes.

Probabilities received in this way, lay in the base of the world, and they are absolutely not voluntary. On the contrary, just because any physical system (and all the world together with it) is finally not a multitude, but *one*, sets of probabilities for allocation of any elements in structure of system in the remarkable image logically interconsistent and mutually correlate with this unique property of the world to be an indivisible unit in the end. Surprising quantum effects result out of this, when two quantum systems which have been born from one and *uniform* condition, however far they have scattered: one, for example, to Paris, and another to Tokyo, "feel" the condition of each other. Physical change of condition in one of such systems instantly and without power physical influence causes quite certain change in a set of probabilities representing a condition of the second particle.

The outstanding Soviet physicist academician V. A. Fock as far as in 1950-s, wishing to emphasize not trivial character of this connection and its *not* physical - causal nature, has named this connection a *logic* one. And this definition even today remains to be the most exact and successfully expressing an essence of this connection.

So, in the basis of the world due to its final indivisibility on multitudes of elements we find an existence of *logic* connection and interdependence in sets of probabilities of the events, evidently seen during a birth of quantum systems from uniform condition (or leaving the quantum interaction which has connected them in the uniform initial condition). And only then, at the next stage as quantum systems transit from potentially possible in physically actualizing condition, usual physical - causal relationships and the dependences begin, connected to transfer of energy and a pulse from one system to

another. So from potential - possible and probable, usual for us world of corporal things and processes emerges.

Certainly, present philosophical concept of a matter is not capable to assimilate these fundamental scientific facts without radical restructuring it in essence. But also the fathers of church, may they find out about it, should rise from their tombs.

It is difficult to foresee all consequences for human culture from full comprehension of these specified facts. One is doubtless: studying them today will allow developing more tolerant, forbearing to concepts of idealism and spirituality system of representations and values, and simultaneously to get rid from obviously out-of-date idealized fetters resulting from the split of philosophy, science and culture "on struggle of parties" of materialism and idealism.

In view of stated above, finding the vertical constituent in spirituality structure by a person is not impossible. Such spiritual development is capable to unify a person and the world, a person and the society, and to transform the life of a person from a present empire of absurdity into fertile and spiritually clarified Oikumena. Simultaneously and under horizontal constituent - the attitude of person to another person - the new spiritual base will be brought. On a threshold of III Millennium such opportunity has a real basis.

Spiritual experience of modern civilized mankind is that neither class or social idea (even such idea as communism), nor national idea (however actual and historically necessary it would seem, for example, in nowadays conditions of Ukraine), nevertheless can execute to the full the function of vertical constituent in structure of human spirituality. Hence - actual today reference to universal idea, to individual as the supreme value. A primate of universal values above class and national ones, affirming tolerance in relation towards social, national or religious ideas is a tempting prospect of spiritual development of society. Comprehension of a primate universal can become a basis for a recognition of equality for claims of national and ethnic ideas, their respect in each separate case, irrespective of number, economic or political condition of the ethnos which has put them forward. Here opens the opportunity of painless and fair decision of numerous modern conflicts on the basis of original dialectics of universal and national.

In this connection it is necessary to emphasize resolutely: there is a common to all mankind blessing (V. N. Porus). For example, a human life. Everyone separately. But also of each ethnos, its culture and language. And life of mankind, growing from it as a whole. There are values which cannot be rejected, not ceasing to be a human being. Life of mankind is an absolute value. Moreover that development of a modern civilization multiplies threats to survival of mankind. These are threat of nuclear self-destruction of mankind, multidimensional threat of ecological accidents, threat of exhaustion of resources by virtue of their uncontrollable consumption and a number of other global problems. From here comes an aggravation of perception of life of mankind as supreme value. Experience of this value should be carried out as experience of absolute value, instead of private or personal. If we transform general absolute value all over again to the personal interests, then rigidly and irreconcilably assert them, we shall overlook this absolute value itself. It ill disappear. We eventually shall crush it in the name of values of an individual, of class, party, etc. Our history is over flown with such examples.

Bogdan Gavrilishyn in his report to the Roman club "Advice to the future" issues interaction of three constituents of any social order: system of values, system of political management and economic system. Having aimed on the basis of the sober analysis of existing society types to find pragmatic ways to construction "stable bridges between different societies to help out Mother Nature to transfer us at to the future", B. Gavrilishyn persistently emphasizes the necessity of change in existing systems of values: individualistic-competitive (for example, in the USA), (officially egalitarian -collectivist (in the USSR and China) and group - cooperative (in Japan) in one direction preferable and desirable with a view of survival of the mankind - in a direction to civilly-realized cooperative values. He explains the contents of this new system of values in such way: "The person is a part of society. An individual is a part of Universe. Search of uniting with nature. A person has needs and recognizes them in others. Searches expressing through applying talents. A person with restrictions, self-discipline, a sense of duty, cooperative way of behavior for obtaining bonuses for others and the person itself, following the moral code, society agreements".

The substantiation of necessity for acceptance of such values system B. Gavrilishyn sees not only in changed conditions in existence of the mankind, sharply aggravated comprehension of need for collaboration and cooperation for people searching ways of a joint survival, but also in greater industrial efficiency of this values system in combination with adjustable market economy.

The new developed for nowadays environment of existence of mankind with growing vulnerability he successfully characterizes with the help of the term invented by him "the Earth is like a spaceship" to emphasize a generality in destiny of all people on the Earth, which nowadays really reminds generality in destiny of space crew members. Here, though, is one rather terrible danger growing from modern rough political life, abounding with displays of various forms of fundamentalism, its sense is very delicately put by Vaclav Gavel, one of the deepest thinkers of the modern times, who fortunately for Checks and Slovaks many years held the responsible post of the president of Czechoslovakia, and then Czech Republic. "I frequently thought, - he writes, - why value of the person should be initial and primary regarding values of the state". His answer is following: the state is a handwork of human beings, while person is a creation of hands divine. One cannot help but agree with this obvious asymmetry of the relationship "a person - the state » for the benefit of the person.

Thus, universal can and should become the highest blessing in system of our values, it can execute the function of vertical constituent in spirituality structure. But this prospect essentially depends on development of the scientific concept of spirituality. Universal can execute the function of vertical constituent in spirituality structure only in the case that it will manage to be funded, implanted in this function in existing culture. And for this purpose it is necessary to ennoble the person.

A way to this is a reconsideration of the concept of the person, transformation of the person from *the stranger* in life in the central point of life. It can be achieved only as a result of radical revolution in modern outlook, revolution in understanding of picture of the world, life of the world and a person. If we want to see a person being the center and essence of all spiritual life and culture system, for this purpose and before it, he should become from the scientific point of view the metaphysical center of life, having clarified

and having humanized metaphysics of life. It will also mean overcoming absurdity of life, break between life ("nature") and the person.

How to achieve it? Anthropocentric ideas in a history of culture and science were repeatedly expressed, but they invariably failed. Moreover, the limitation and narrowness of anthropocentrism was opened by scientific progress itself. That circumstance deserves, however, special attention, that all known forms of anthropocentrism from Ptolemy's picture of the universe and up to anthrop principle in modern cosmology are tightly connected to the person as *a physical* being and never appeal to spirituality of the person.

In this respect the quantum physics has made a grandiose break. It has wrapped up a problem. It completely leaves out an external material-substrate environment of the world and concentrates attention on mental structures of probabilities in its basis. Simultaneously it opens a remarkable identity of the thinnest structures of a mental basis of life and ideal structures of consciousness. If in interpretation of quantum mechanics we do not lead up our business to a recognition of unique properties of the world as indivisible unit, and inevitably - up to a recognition of primacy of the probabilities organized by this phenomenon of integrity in mental structures with remarkable logic properties of mutual correlation and mutual coordination, we can tell nothing neither about fundamental properties of the world, nor about an opportunity of a person in it.

What can we hope for, going that way?

Abandonment, uselessness and as result the horror and senselessness of human existence, are well investigated by existentialism. It is opposed by the holistic experience in which, starting even with Upanishad, the inevitable revolution is certified in an inner world of each person rising up to consciousness of unity and even identity of "me" with a spiritual basis of life. In uncountable texts through absolutely not obligatory from the modern point of view mystical and religious stratifications, through quite often poetic form of expression, the most important invariable makes the way: comprehension by each person this special importance of the personal existence, let so transitory and fragile, subject to all falsities of physical world and society, but greatly expressing all in the world, the most important in the world through a tiny spark of their own spirituality. And this small spark of spirituality specifies a true way to originally free and worthy existence of the person.

I am a human being. I am a microcosm, not simply carrying in itself the reflection of all eternal and immortal space, but the most important in it. My "I" is identical to a mental basis of being. I am not only possible, but necessary and inevitable in the world. My existence also should be inverted to this unique fact in the world. This ingrained position in life, in a primary spiritual basis of being, transforms a person from casual and extraneous in necessary and essential, and thus - funds universal in function of vertical constituent in spirituality structure of culture created by it. Going in such way, it is possible to hope to come to the new concept of spirituality of the person meeting the requirements of today and its culture.

The road to this is opened with a basic change of a scientific picture of the world, taking place in last twenty years. The question is a well-known fundamental problem in the bases of quantum physics and at last the decision it found in remarkable experiments of A.

Aspect, N. Gizona's, etc., experiments which from the beginning of 80-es of just gone century already do not cause doubt in anybody.

Well-known "mysteries" of quantum mechanics are reduced to two questions: (1) why probabilities are primary in the description of a physical reality; (2) why these probabilities in a so-called pure quantum condition are wonderfully correlated, what finds confirmation in above mentioned EPR-experiments.

It is obvious, that there cannot be independent answers to these questions because clearing of the nature of quantum probabilities simultaneously should clear and their correlation nature. Both can be achieved going in the tested way - having distributed the general relativistic approach in physics on extremely common concepts of "element" and "multitude". Relativization of concepts "element" and "multitude" means that finally the world exists as indivisible integrity, instead of multitude (of any elements). It in accuracy corresponds a quantum picture of the world. As quantum systems in a so-called pure condition cannot be completely spread out on multitudes of elements, we are compelled to describe them in terms of potential opportunities of allocation of such elements and in terms of the corresponding probabilities representing now their (i.e. quantum systems) objective - real structure.

On the other hand, this quantum property of the world as indivisible integrity appeared responsible for *implicative-logic*² properties of structure in generated by it potential opportunities of quantum systems that has found strict confirmation in the mentioned quantum-correlation experiments. The reduction of wave function and quantum-correlation effects are trivial consequence of the implicative-logic organization of potential opportunities in quantum systems. These effects have neither physical – causal, nor material, but relational nature and are generated by changes (owing to measurement or physical interaction) in structure of relations of mutually supplementing sides of reality. One of these sides expresses actually existing structure of system as real (and physically verified), but only concerning allocated multitudes (concerning allocated by virtue of final indivisibility systems on elements and multitudes). Other side of the system - not less real - expresses sets of potential opportunities objectively inherent in system and generated by the same property of indivisibility of it into elements and multitudes. The third and deepest aspect of a physical reality - quantum property of the world as indivisible unit is shown in this feature of final indivisibility of the system into elements and multitudes. It is this feature that operates the world of potential opportunities of quantum system under laws of logic implication depending on that occurs in it actually - plural configurations under influence of measurement (or physical influence).

All that there was said may be illustrated by means of following picture. Please see the next page.

² See for example: I.Z.Tsekhmistro. "Implicative logical nature of quantum correlations", *Physics–Uspekhi*, 2001, Vol.44, # 4, London.

The last 25-years science world picture. From three levels only the first one is material:

The first level. World of conventional objects: galaxies, molecules, atoms, particles, fields, etc. Any pair of elements can interact physically through exchange of energy and impulse only.

as plurality of galaxies, stars..., elements (including physical fields), etc. such real physical elements interact physically by a way exchange

The second level. Potential possibilities of such (like the first level) physical elements in quantum state. These potential possibilities have implicative logical organization in experiments by A.Aspect, N.Gisin and others.

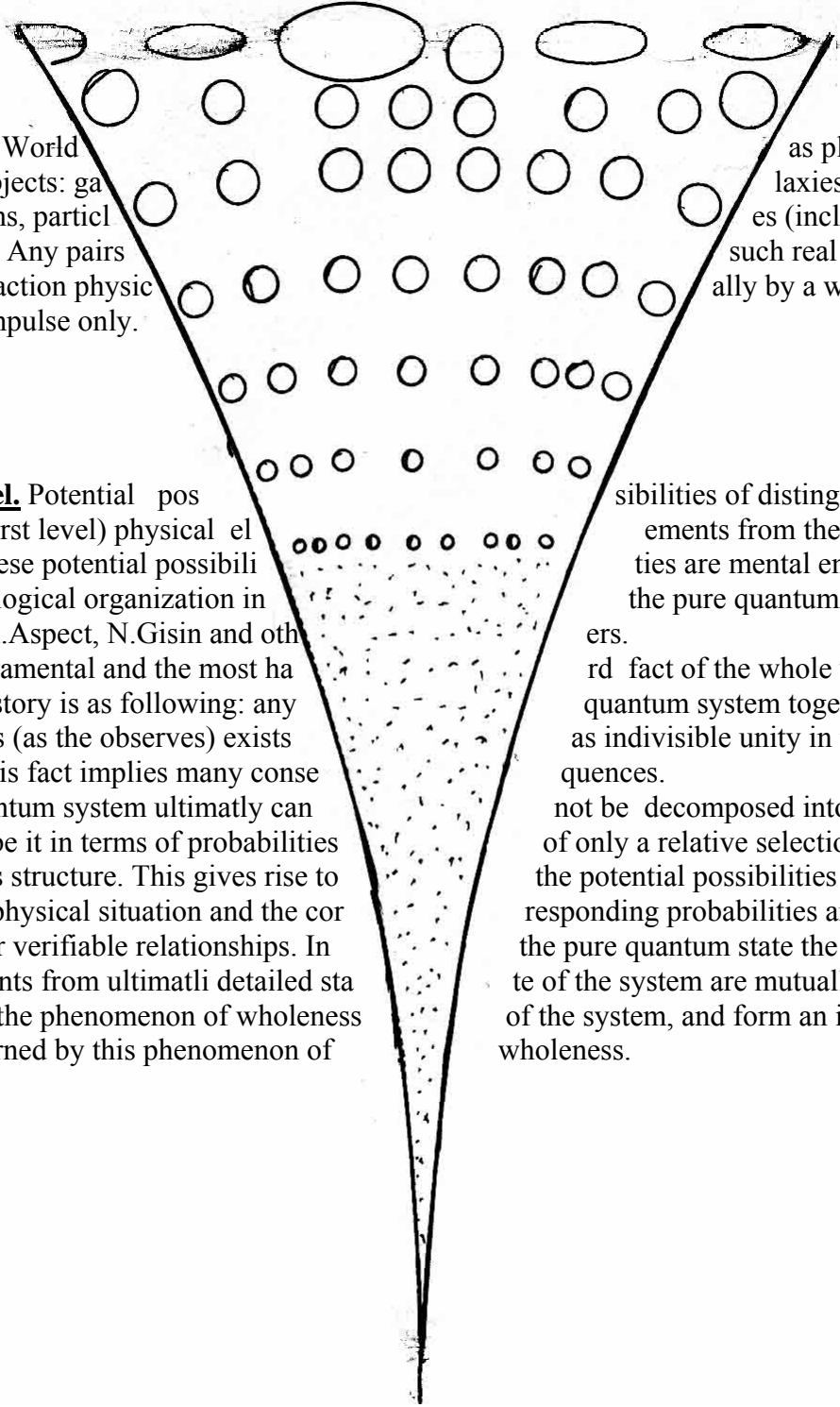
sibilities of distinguishing elements from the so-called pure quantum states are mental entities and they do not exist in the pure quantum state (according to quantum mechanics).

The most fundamental and the most important fact of quantum mechanics history is as following: any world including us (as the observers) exists only on the quantum level. This fact implies many consequences.

rd fact of the whole very rich quantum system together with all its elements as indivisible unity in the so-called sub-wholeness.

Since any quantum system ultimately can be described in terms of probabilities of elements or sets in its structure. This gives rise to elements in an actual physical situation and the correlations, like any other verifiable relationships. In the selection of elements from ultimately detailed states and correlated by the phenomenon of wholeness. The structure is governed by this phenomenon of wholeness.

not be decomposed into elements or sets, only a relative selection of certain elements. The potential possibilities of quantum systems and corresponding probabilities are ontologically connected with the pure quantum state. The probabilities of elements of the system are mutually coordinated and form an implicative logical wholeness.



The third level. The most fundamental quantum property of the world as undivisible unity. This unique property of the world is the real and unexhaustible source of potential possibilities and simultaneously governs them by implicative logical laws (that confirmed by the experiments mentioned above).

So, in a result we have:

Firstly: the world actually is not mechanistic or only physical - causal (like a clockwork). Regarding the relation to mechanistic-physical-casual side of the world there is its remarkable additional logic - mental side submitted by a layer in its basis of quantum potential opportunities in which quantum-correlation implicative-logic by nature effects are developed. The natural basis of this additional world is the surprising side of the world as the indivisible unit, shown in the deepest basis of it - in a so-called subquantum level.

Secondly: In this new picture of the world a person appears the fundamental, ineradicable and essential phenomenon of life, more fundamental, more ineradicable and more essential even in comparison with the religious doctrine about his occurrence in the world at divine will.

Thirdly: the quantum picture of the world always assumes and always keeps in itself an opportunity of the person by virtue of presence in a fundamental basis of the world of mental implicative - logic structures of potential opportunities (and representing them in quantum mechanics of probabilities), which are completely identical to implicative - logic structures of thinking and consciousness of a person and regarding which we are the real ***similarity*** (: And the God created a man by his image and similarity).