

La chiara ed elegante riflessione di **Kirill Kopeikin**, su **EUCARESTIA E MATERIA** è stata presentata alla V Conferenza Teologica Internazionale della Chiesa Ortodossa Russa ([http://theolcom.ru/ru/full\\_text.php?TEXT\\_ID=343](http://theolcom.ru/ru/full_text.php?TEXT_ID=343)). C'interessa particolarmente perché ha per oggetto due cardini fondamentali della visione di **Teilhard**, circa la Materia e sull'Eucarestia. Le intuizioni teilhardiane sulla struttura della **Materia** non sono oggi per nulla sorprendenti: *“atomi, elettroni, corpuscoli elementari devono possedere un rudimento d'immanenza, vale a dire una scintilla di Spirito”, “la Fisica, spinta all'estremo delle sue analisi, non sa più con precisione se ha nelle mani Energia pura o invece del pensiero”, “l'Energia fisica non è che dell'Energia psichica materializzata”*. La sua posizione non conosce le mezze misure sull'**Eucarestia**, quale rinnovamento dell'Incarnazione: *“la potenza del Verbo incarnato s'irradia nella Materia; discende sin nel fondo più oscuro delle potenzialità inferiori”, “l'Eucarestia è la manifestazione dell'energia unificatrice di Dio che viene applicata ad ogni atomo spirituale dell'Universo”, “un solo evento si svolge nel Mondo: l'Incarnazione, realizzata in ogni individuo mediante l'Eucarestia”*. Questa, in altre parole, realizza il *continuum* fra terra e cielo.

**Kopeikin** analizza l'evoluzione del concetto di Materia e infine afferma che siamo giunti sul punto di rimuovere il confine fra il mondo fisico e quello psichico. Dunque, **si va affermando quel continuum spirito-materia sostenuto da Teilhard**, cosicché (p. 11): *“possiamo delineare un nuovo paradigma che ci rende capaci di superare le distanze fra la conoscenza scientifica e la conoscenza teologica, preparando così la strada allo sviluppo di un'antropologia scientifica che riconosca il realismo delle celebrazioni sacramentali ed implichino la fondamentale relazione fra l'uomo e Dio nell'estremo abisso meta-psichico della sua anima”*.

*La redazione del sito*

## THE EUCHARIST AND MATTER

Very Rev. Prof. Kirill Kopeikin

### *Introduction*

For all of us who have had a very materialistic secondary education, it is self-evident that we live in a “material” world, with “material” often understood as something “real” and opposed to “spiritual”, as something inert, static, stagnant, unyielding to any “non-material” impact, such as a word. But then a question naturally arises: What is “real” about the sacraments? Does the consecration of bread and wine in the Eucharist making them the Body and Blood of Christ produce any “real” change in these substances? If it does, it can be detected by some measurements or some instruments. For a believer, it is fearful to think so, for such an idea, by a further inevitable move, will unavoidably pose the question about the need to make an “objective” verification of how effective the sacraments are, with all the consequences that then ensue. If it does not, if the Eucharist does not affect nature itself, it means it exists only “in the awareness” of the faithful, thus leading us inevitably to a psychologism which is absolutely alien to the Orthodox tradition in its ontological direction — to a psychologism which we invariably associate with the Protestant view of the sacraments.

Considering the reality of the sacraments, we follow the patristic tradition whereby, in the Eucharist, the essence or substance of bread becomes (is transubstantiated into) the essence of the Body of Christ, while the essence (substance) of wine becomes the essence of the Blood of Christ, with the properties or accidents of the bread and wine remaining the same. This point of view is remarkable for its rootedness in tradition, but a question arises unwittingly: Do we not use a language totally torn away from today's realities? The Aristotelian philosophical terminology, once used by the holy

fathers, appears to be totally alien to our mentality today. Indeed, let us think over the question: what is the difference between, say, the essence of bread and the essence of a loaf, or the essence of a cat and the essence of a dog? We will hardly be able to give an answer to a question posed in this way. However, considering the reality of the sacraments, we, without a moment's hesitation, talk about the essence of the Body of Christ and the essence of the Blood of Christ. Is it because the realm of theological thought is so torn away from any realities in our awareness that the theological terminology can be quite wanton, dissociated from the present and living in a timeless eternity? The holy fathers, however, used the language of the philosophy of late antiquity not because of its special "sacredness" but because at that time it was the highest achievement of the human genius, the language of the intellectual elite which was used to speak of God, the world and humankind.

According to Protopresbyter John Meyendorff, the exceptional complexity of the present situation lies in the fact that "all Christians are today facing the challenge of a uniformly and essentially unchurched world. This challenge has to be faced as such, as a problem which needs a theological and spiritual answer... These apparent facts of our situation today do not at all mean that we need what is commonly called 'a new theology', one which breaks with Tradition and continuity; but the Churches certainly need a theology which would solve today's problems rather than repeat the old solutions of old problems. The Cappadocian Fathers were great theologians because they managed to preserve the contents of the Christian message when it faced a challenge from the Hellenic philosophical worldview. Without their partial acceptance and partial rejection of this worldview, and first of all, without their understanding it, their theology would have been senseless. At present, the task is not only to remain faithful to their thought but also to emulate them in their openness to the problems of their time".<sup>1</sup> A sessional hymn for the Day of the Three Hierarchs — Basil the Great, Gregory the Theologian and John Chrysostom — praises the achievement of their theological efforts in this way: Receiving wisdom from God like three more apostles of Christ, with the discourse of understanding you set forth dogmas, which of old the fishermen set down in simple words, through the power of the Spirit in understanding; for thus was it fitting to acquire a simple exposition of our Faith.

Today we live in a world which is actually heathen, for heathens, according to St. Paul, are those who *worship and serve created things rather than the Creator* (Rom 1. 25). Today the Christian message faces a challenge from the modern materialistic worldview. And, following the patristic tradition and emulating its openness to the problems of their time, we should, first, clarify where this modern materialism has come from and what its premises and limitations are. Secondly, we should try to explain in modern terms to modern heathens — and we ourselves are such to a consid-

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<sup>1</sup> *Мейендорф И., протопресв.* Православие и современный мир. М., 1995. С. 57–58.

erable extent by virtue of our education — what the reality of the sacraments is in the “materialistic” world.

It might seem that the impact of the sacraments on the materiality of this world should not interest the Church, since it is not concerned with the order of the universe but rather with the salvation of human souls. However, this point of view is too simplistic. The point is that the very possibility of salvation presupposes a certain ontology of being — a non-materialistic ontology, for salvation is deification, re-union with the Lord, while the self-sufficient, unchangeable and static matter, defined as something opposite to the Spirit, is essentially incapable of such unity. The materialistic ontology of modern science claiming true knowledge of the world comes into contradiction with the Church’s vision. That is why Metropolitan Filaret of Minsk and Slutsk, Patriarchal Exarch for Belarus and chairman of the Synodal Theological Commission, in his address to the 2000 Bishops’ Council of the Russian Orthodox Church, stated that the task “of the theological understanding of methods and limitations of the fundamental sciences which claim ‘an objective knowledge of the world’, is one of the urgent tasks for Orthodox theology at the turn of the millennium”.<sup>2</sup>

#### *Making φυσική objective*

It is commonly accepted today that the world exists regardless of human consciousness. A radical expression of this point of view is Descartes’ opposition between cogitans and res extensa. A number of researchers into the history of science maintain that this view originated in medieval nominalism, which marked the transition of the metaphysics of being to the metaphysics of will.<sup>3</sup> The medieval scholastic theology inherited from heathen antiquity a view of the world as a totality of original essences or substances, in which various properties or accident were “deposited”. This view however, came into contradiction with the biblical faith in the omnipotence of the Creator, who, according to the scriptural testimony, is *the Lord; let him do what is good in his eyes* (1 Sam 3. 18). The so-called “voluntaristic theology” sought to resolve the conflict by restoring the faith in the absolute omnipotence of the Divine Will — the faith which is essentially incompatible with the central ideas of Greek ontology as a teaching on essence and matter.<sup>4</sup> As the supreme reason for any existence, which is Divine Will, has no law over itself; God, according to the “theologians of will”, can create any accidents of His own will without any need for substance in doing so. Essence ceases to be that

<sup>2</sup> Юбилейный Архиерейский Собор Русской Православной Церкви. Сборник докладов и документов. СПб., 2000. С. 89.

<sup>3</sup> See for instance: *Гайдено П. П.* Волонтиративная метафизика и новоевропейская культура. — В сб.: Три подхода к изучению культуры. *Ред. Вяч. Вс. Иванов.* М., 1997. С. 5–74; *Катасонов В. Н.* Интеллектуализм и волонтиратизм: религиозно-философский горизонт науки нового времени. — В сб.: Философско-религиозные истоки науки. М., 1997. С. 142–177.

<sup>4</sup> The point is that the static universe of self-sufficient and unchangeable essences, even if relatively self-sufficient, “resists” as it were the omnipotence of the Lord. Besides, the introduction of the notion of *essence* and the unchangeable “nature” of things involves the introduction of the concept of *matter* as a changeable “non-essentiality”. Even if matter is declared created by God, just as ideas-essences are created by Him, the inner dualism is implied.

in which the existence of a thing is rooted. “Substances” or “universalia” perceived intellectually turn out to be only names for classes of similar objects, while real existence belongs only to accidents perceived sensually. This offers an opportunity for interpreting knowledge as the establishment of relations between properties, that is, for limiting it to the level of events.

The Nominalists brought about the destruction of the stable and ontologically hierarchical concept of the of the universe, the separation of accidents from substances, the de-substantialization of the world and the reduction of ontology to a relational system — all this led in Modern Times to a radical review of gnoseology. The point is that the knowledge of properties as existing only “in relations to the subject” cannot draw us nearer to true ontological knowledge. To remove any “subjectivity”, the so-called “objective” method of knowledge was proposed, whereby a researcher into nature describes the world, not as related to humankind — which would inevitably involve the unavoidable point of “subjectivity” — but as related “to itself”. To be more precise, the researcher’s task is to describe the relation of properties characteristic of one singled-out “element” of the universe to another element. A subject<sup>5</sup> comes out of the world, which is a world of objects in opposition to it<sup>6</sup>, and sacrifices this world to itself<sup>7</sup> by dismembering this already dead and objectivized world, thus discovering its “organization”. Instead of cognizing the essence of things and their profound existentiality — precisely the knowledge the medieval “natural theologians” claimed to pursue — the naturalist of Modern Times has limited himself to describing the relations between their properties. In doing so, he seeks to correlate one unknown with another unknown in a way that the “essence” of the objects he studies, that is, the very mode of their existence, is taken out of context to leave, as a “dry deposit”, only the “form” of the co-relations of their properties, referred to as an “objectively measurable value”. This is what Galileo did when he rethought the task of natural science. Man and nature, he maintains, speak in different languages. For this reason, we should describe nature not in the language of human speculative notions but “in its own language”; describing the co-relation of one isolated part of nature to another from the point of view of a third, extraneous position, that is, the point of view of a human being.

### *Μετα-φύσικα of matter*

Having made a thorough analysis of the neo-European “classical” natural science, Kant showed that since the Modern Era the metaphysics of nature had turned into a metaphysics of matter, a special kind of matter at that — the “ideal” matter in general. Discussing the Galilean problem of idealization as a prerequisite for natural science turning into a mathematical science, Kant wrote, “But in order to make possible the application of mathematics to the doctrine of the body, which can be-

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<sup>5</sup> As a reminder, Lat. *subjectum* means “ad-jacent”, “ad-joining”.

<sup>6</sup> Lat. *objectus* — “opposition”, “contraposition”, “confrontation”.

<sup>7</sup> *Objectare* also means “to sacrifice”.

come natural science only by means of such application, the principles of the construction of concepts that belong to the possibility of matter in general must precede. Hence a complete analysis of the concept of matter in general must be laid at the foundation of the doctrine of the body. This is the business of pure philosophy, which for this purpose makes use of no particular experiences but uses only what it finds in the separated (although in itself empirical) concept [of matter] with regard to pure intuitions in space and time (according to laws which already depend essentially on the concept of nature in general); hence such a doctrine is an actual metaphysics of corporeal nature”.<sup>8</sup> Therefore, objectivization is possible only on the assumption that what lies at the metaphysical basis of existence is an absolutely self-identical, “ideal”, matter.<sup>9</sup> Unlike the concrete “objective reality” given to us by the senses, this implicit general “non-essential essence”, which makes the procedure of objectivization possible and which is referred to as “matter” — a matter in general that alone makes it possible to apply mathematics to natural science — is not in itself an object of sensual perception and therefore has no empirically recorded properties whatsoever. It is weightless, incompressible, self-identical and, most importantly, omnipresent. Unlike the concept of matter developed in antiquity and the middle ages<sup>10</sup>, the neo-European theory of matter acquires the property of ideality. Already “Galileo’s matter is presented as always equal to itself, unchangeable, self-identical, that is, it is given the properties which Aristotle gives to the form”.<sup>11</sup>

The Catholic Church immediately realized that the ontology of the universe implied by Galilean physics, was incompatible with the Christian view of the world. It was precisely for this reason, according to the French scholar Pierre Redondi<sup>12</sup>, that Galileo was put on that notorious trial, which is still surrounded by numerous myths. Redondi has proved that the true reason for Galileo’s convic-

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<sup>8</sup> Кант И. Метафизические начала естествознания. — В: Кант И. Сочинения в 6 тт. т. 6. М., 1966. С. 60–61.

<sup>9</sup> The affirmation that “science has proved that the world is material” is senseless, for the objectivizing scientific methodology itself is correct only if the world is material (in the indicated sense).

<sup>10</sup> Plato’s matter is a substance devoid of properties. As it forms all bodies, it is ideal in taking up models. Matter is described as “receiver” (ἡ ὑποδοχή — repository, depository), sometimes as the mother (μητέρα) of all that appears in the sensual world (Timaeus, 49a, 50d, 52a–b, d). The union of father model and mother matter generates their child, Cosmos, as an intermediate nature (Timaeus, 50d). The association of matter and mother played up by Plato is rooted in the mythological tradition and finds a confirmation in language. Suffice to recall the Latin *materia* - matter and *mater* — mother. It is the lack of properties in matter that makes it a good mother *materia* for the embodiment of ideal prototypes, “while receiving all things, she never in any way, or at any time, assumes a form (μορφήν)” (Timaeus, 50 b-c), for “that which is to receive all forms should have no form (εὐδωον)” (Timaeus, 50e). Thus, for Plato and Platonists, matter was the beginning of non-being (See, *Бородай Т. Ю.* Идея материи и античный дуализм. — В сб.: Три подхода к изучению культуры. М., 1997. С. 75–92). Arguing with Platonism, Aristotle splits Plato’s “other” into two concepts: devoidness (στέρησις) and matter (ὕλη). Devoidness is opposite to being, while matter is an intermediary between these two opposites of what is and what is not (*Physica*, I, 9, 192 a 16–23). Aristotle’s matter is not an evil in itself, nor is it absolutely amorphous. On the contrary, it “is nearly, in a sense, substance” (*Physica*, I, 9, 192a3–6), since, unlike “devoidness”, it can assume definitions. Aristotle describes this ability of matter to take on a form as “possibility” — δύναμις (See, *Гайденко П. П.* Эволюция понятия науки. Становление и развитие первых научных программ. М., 1980. С. 281–290).

<sup>11</sup> Исторические типы рациональности. т. 2. *Отв. ред. П. П. Гайденко.* М., 1996. С. 40.

<sup>12</sup> Redondi P. *Galileo eretico.* Torino, 1983, X+460 p. Реферат книги П. Редонди «Галилей-еретик» см. в сб.: Методологические принципы современных исследований развития науки (Галилей). М.: ИНИОН АН СССР, 1989. С. 62–87.

tion by the Catholic Church was not his Copernicanism, as the official text of the verdict indicated, but his commitment to the atomistic conception of matter incompatible with the doctrine of the Eucharist adopted by the Council of Trent.<sup>13</sup> In the archives of the Roman Inquisition, which were opened in 1983 on the occasion of the 350th anniversary of Galileo's trial, Redondi discovered an anonymous denunciation of Galileo. Its author points to the incompatibility of the Galilean atomistic ideas with the decree of the Council of Trent: the preservation of accidents in the Eucharist, provided they are rigidly linked with the material medium substance (as atomism maintains in contrast to Aristotelianism) means automatically that this substance is preserved after transubstantiation, that is, the bread remains bread and its essence does not change to become the essence of the Body of Christ. And this, according to the author of the denunciation, is tantamount to the rejection of the Catholic understanding of transubstantiation and the doctrine of Trent. According to Redondi, Galileo's conviction for his Copernicanism saved him from the real possibility of being called to account in a much more dangerous issue and at the same time showed the ardent commitment of Pope Urban VIII to the purity of Catholic tradition.<sup>14</sup>

Significantly, the new materialistic picture of the world was born "in a theological jacket".<sup>15</sup> In the move from the Aristotelian scholastic picture of the world to the atomistic one, a decisive role belonged to the Reformation. It was Protestantism that opened up a way for non-Aristotelian physics by denouncing the Catholic Thomistic interpretation of the sacraments. This new point of view of the Reformation theologians proved to be more preferable because it was only an understanding of matter as an absolute and passive extension devoid of any distinctive substantiality implying the existence of a purpose that emphasized the uniqueness of man as the only being endowed with intellect and free will. Besides, this conception of matter, according to Protestant theologians, is the best evidence for the existence of God: matter devoid of an internal source of movement inevitably implies the existence of an external source, which is God. It is not surprising therefore that these arguments were included in The Thirty Nine Articles of Religion of the Church of England, thus being granted a legitimate place in Anglican theological doctrine. And it was quite natural that "at a

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<sup>13</sup> It is worthwhile mentioning that in 1664 *The Principles of Philosophy* by Descartes was also included in the Catholic "Index of Prohibited Books" "not because Descartes was a manifest follower of Copernicus but because his concept of matter was incompatible with the doctrine of transubstantiation" (Койре А. Ньютон и Декарт. — В кн.: Койре А. Очерки истории философской мысли. О влиянии философских концепций на развитие научных теорий. Пер. Я. А. Ляткера под ред. А. П. Юшкевича. М.: Прогресс, 1985. С. 259).

<sup>14</sup> See, *Косарева Л. М.* Методологические проблемы развития науки: Галилей и становление экспериментального естествознания. — В кн.: Косарева Л. М. Рождение науки нового времени из духа культуры. М.: Институт психологии РАН, 1997. С. 315–323.

<sup>15</sup> *Петров М. К., Потемкин А. В.* Социальный генезис науки. — В сб.: Социология науки. Ростов-на-Дону, 1968. С. 27.

time when the Inquisition took atomists to trial in Catholic Italy, Protestant England published a whole series of atomistic-corpuscular works by Charleton, Boyle, and Newton”.<sup>16</sup>

*Physics on the threshold of metaphysics*

By the early XXth century, the world seemed to researchers to be a perfect mechanism consisting of infinitesimal “parts” closely fitted to one another. True, there was certain remaining vagueness as to some “particulars” of its order, which they did not think would be difficult to remove. Then, at a time when the world seemed basically “cognized”, the situation changed radically. Quantum mechanics, which emerged in the early XXth century, discovered a limit to which objectivity is possible in microcosm.<sup>17</sup> As was already mentioned, the principle of “objective” measurement lies in the fact that we project “elements of reality”, which we have artificially singled out, on to a measuring instrument we have designed. The outcome of this projection is only “the form” of their relationships presented as an “objective result of measurement” expressed in a number, while the inner “essence” is put as it were “in the parenthesis” of these relationships. This objectivity can be methodologically correct only if we assume that the essence in the parenthesis is negligible, that this essence is an omnipresent, self-sufficient, unchangeable and self-identical matter. Up to a certain point, this assumption was justified. But in the realm of microphysics, this hitherto negligible essence begins to manifest itself. The spontaneous activity of micro-objects detectable in microcosm can be interpreted as revealing a certain “inner”, “essential” dimension of existence, which, as it were “distorts” the strict mathematical form of natural laws.<sup>18</sup> It is this non-controlled activity that conditions our inability to predict unambiguously the results of a particular quantum mechanical experiment: so we have to describe micro-reality in the language of probabilities.

It has been discovered that accidentality is inherent in the very nature of the universe. It is significant, that from the point of view of “voluntarist theology”, which played a great role as a spiritual prerequisite of the XVIIth century scientific revolution, the supreme cause of any existence is the omnipotent, totally nondeterministic will of the Creator, since omnipotence is essentially indetermi-

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<sup>16</sup> Косарева Л. М. Методологические проблемы развития науки: Галилей и становление экспериментального естествознания. — В кн.: Косарева Л. М. Рождение науки нового времени из духа культуры. М.: Институт психологии РАН, 1997. С. 322.

<sup>17</sup> See, Севальников А. Ю. Проблема объективности в науке: история и современность. — В сб.: Наука: возможности и границы. Отв. ред. Е. А. Мамчур. М., 2003. С. 107–134.

<sup>18</sup> As A. Wentzel noted in his *Metaphysics of Modern Physics*, “the material world, in which such free and spontaneous events are possible... cannot be called dead. This world, if its essence is at a point, is rather a world of elementary spirits (elementary logoses, rather — A. K.); and relationships between them are determined by some *rules* (let us remember that λόγος is not only “word”, but also “relation” and “rule” — A. K.) taken from the realm of spirits. These rules can be formulated mathematically. Or, in other words, the material world is a world of lower spirits whose relationships can be expressed in a mathematical form. We do not know what the significance of this form is, but we know the form. Only the form itself, or God, can know what it can signify in itself” (Cited in: Франк Ф. Философия науки. М., 1960. С. 360).

nancy.<sup>19</sup> The discovery of strict laws of nature began to be taken as a proof that any divine interference in the law-governed structure of the universe is impossible. The fact that it was impossible to predict the results of any physical process was accounted for by the assumption that we cannot absolutely find out all the initial conditions. In the 20<sup>th</sup> century, the penetration into the realm of microcosm helped to ascertain that accidentality in it was not conditioned by our ignorance, or by the existence of some “hidden parameters”, but by a kind of volition inherent in the universe “as such”. Moreover, quantum mechanics has established that the accidents described by objective science in their co-relations have actually proved to be not self-existent but represent only an effect caused by the particular situation of an experiment. Classical physics was based on the belief that the properties of measured objects exist “on their own”, regardless of the fact of observation, and the impact of observation on a studied system can be arbitrary and minor. However, thanks to quantum mechanics, it has been established that in the realm of microcosm some of the objectively measurable parameters ascribed to micro-objects are not at all “objective” in an ordinary sense of this world, that is, they exist regardless of an observer and the fact of measurement, but rather, they emerge only in the very moment of observation and do not exist outside it.<sup>20</sup>

Significantly, in his 2400 Years of Quantum Theory, Schroedinger links the development of atomistics (and, accordingly, quantum theory) with the first attempt to resolve what he calls “the oppressive antinomy”: “how to combine the freedom of will required by moral responsibility and the strict laws of nature?”.<sup>21</sup> The volition detected by quantum mechanics as something inherent in the world, combined with the “non-objectivity” of properties opens, as it were, a kind of a “natural gap” for the work of divine providence. That is why Sir Arthur Eddington used to say that “religion became

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<sup>19</sup> Significantly, “this idea was to be vindicated mostly by atheistic philosophers of the XIXth century, who were guided by Laplace’s concept of absolute determinism, such as Feuerbach in his *The Essence of Christianity*, and Bakunin in *Federalism, Socialism and Anti-theologism*. Their logic was roughly this: God is a synonym of accidentality. The world is governed by laws; there is nothing accidental in it. Therefore, there is no God. The basic criticism of this syllogism by Christian theologians of the XIXth–XXth centuries was aimed at his first assumption (see, for instance, in A. Yelchaninov: “There is nothing accidental in the world. Those who believe in accident do not believe in God”) while actually it is the second assumption that is incorrect” (Гоманьков А. Идея эволюции в палеонтологии и Священном Писании. — В сб.: Наука и вера: Материалы научных семинаров. Вып. 6. СПб., 2003. С. 44–46).

<sup>20</sup> In 1964, John Steward Bell formulated the inequalities which were to be termed Bell’s Inequalities. These inequalities are limits imposed by the demand of locality on correlations between experiments carried out on various particles united by a common past. A series of experiments carried out in the last quarter of the 20th century confirmed the validity of the violation of Bell’s Inequalities. The natural philosophical, gnoseological and ideological consequences of Bell’s Inequalities are discussed in the *Foundation of Physics* journal issues, Vol.20. № 10; Vol.21. № 1–3, devoted to his 60th birthday. See also, *Bell J. S. Speakable and Unspeakable in Quantum Mechanics: Collected Papers on Quantum Philosophy*. Cambridge, 1987; Философские исследования оснований квантовой механики: к 25-летию неравенств Белла. М., 1990; Гриб А. А. Нарушение неравенств Белла и проблема измерения в квантовой теории. Дубна, 1992; Белинский А. В., Клышко Д. Н. Интерференция света и неравенства Белла. — Успехи физических наук, 1993, т. 163, № 2. С. 1–45; Кулик С. П., Севальников А. Ю. Нарушение неравенств Белла и проблема квантовой онтологии. — В сб.: Спонтанность и детерминизм. М., 2006. С. 109–128.

<sup>21</sup> Шредингер Э. 2400 лет квантовой теории. — In Гейзенберг В. У истоков квантовой теории. М., Тайдекс Ко, 2004. С. 336.



possible after 1927” (the year of the Solvay Congress at Como which gave a final formulation to quantum mechanics”.

*Symbolism of the physical and psychical*<sup>22</sup>

Along with the penetration “deep inside” the universe, in the hitherto hidden dimension of existence which Geizenberg termed as “the sub-conscience” of nature, continuous attempts were made throughout the XXth century to reach the depths of the human psyche. In the XXth century, a new and acute awareness developed that beyond conscience there is a much greater ocean of the sub-conscious, the meta-psychical that to a considerable extent pre-determines our “conscious choice”.<sup>23</sup> “What we have before us is a psychic reality at least equivalent to the physical one”, C. G. Jung wrote, “...we only imagine that we possess and control our minds, but actually what science terms as ‘psyche’ and perceives as a question mark put in the cranium is ultimately an open door through which something unknown and inconceivable in its action occasionally penetrates from the super-human world, tearing people by its nocturnal visit away from the realm of the human and making them serve its own purposes”.<sup>24</sup>

W. Pauli, a founder of quantum mechanics, who reflected much on the philosophical problems of modern physics and worked closely together with C. Jung, together with him arrived at the conclusion that the physical and the psychical perceived objectively are in fact two complimentary ways of the manifestation of the one nature; otherwise, they could not become manifested in interaction, in particular, in the synchronistic “coincidence” of events. “As psyche and matter are in the same world and, moreover, are in continuous contact with each other and are eventually based on an imperceptible transcendental factor, it is not only possible but even highly probable that psyche and matter are two different aspects of the same thing”, Jung wrote.<sup>25</sup> “The common problem of relations between the psychical and the physical, the inner and the outer, cannot be solved even with the help of the concept of ‘psycho-physical’ parallelism developed in the last one hundred years”, Pauli argued, “modern natural science has led us to a more satisfactory viewpoint of this relationship by introducing the concept of additionality directly into physics. More satisfactory is a situation where the physical and the psychical could be viewed as complimentary aspects of the same reality”.<sup>26</sup>

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<sup>22</sup> N.d.R – Da qui sino alla fine vi sono delle considerazioni che sono piuttosto estranee alla Chiesa Cattolica la quale, a differenza della Chiesa ortodossa, non incoraggia la relazione diretta “fra l’uomo e Dio nell’estremo abisso meta-psichico della sua anima”.

<sup>23</sup> See, for instance, *Элленбергер Г. Ф.* Открытие бессознательного: история и эволюция динамической психиатрии. Ред. В. Зеленский. Ч. II. СПб., 2004.

<sup>24</sup> C.G. Jung, Relation of Analytical Psychology to Poetry, in: Юнг К. Г. Дух в человеке, искусстве и литературе. Ред. В. А. Поликарпов. Мн., ООО «Харвест», 2003. С. 100–101.

<sup>25</sup> C.G. Jung, On the Nature of the Psyche.

<sup>26</sup> W. Pauli. The Influence of Archetypal Ideas on the Scientific Theories of Kepler, in: *Паули В.* Физические очерки. М., 1975. С. 171–173.

“Pauli thought the ideas associated with the sub-conscious would go beyond ‘the narrow framework of therapeutic usage’ and make an influence on all the natural sciences concerned with life and all that is linked with it”, Aniela Jaffe, a disciple and follower of Jung, wrote.<sup>27</sup> Whereas Jung himself was convinced that “sooner or later, nuclear physics and psychology will have to come together as they, moving in opposite directions independently of each other, would make a breakthrough into the territory of the transcendental, one through the notion of atom, another through the concept of archetype”. He wrote, “Psyche and matter exist in the same world, with each implicated in the other; otherwise, interaction would be impossible. Therefore, if the research could move far enough, we would ultimately come to matching physical and psychological concepts”.<sup>28</sup>

### *Conclusion*

We seem to stand today on the threshold of a new scientific revolution, similar to the one that happened when Galileo directed his telescope to heaven. It is difficult for us today to appreciate the boldness of “the move from the lower to the upper”. Indeed, for us the celestial and terrestrial bodies are qualitatively homogeneous, so that instruments used to study the earthly essence are quite suitable for studying the “heavenly” essence. Meanwhile, it was commonly accepted as far back as antiquity that heavenly bodies were made of a matter different from the one making up the sublunary world. Aristotle and the natural philosophers who inherited his system of views thought so too. They believed that while all the earthly things are made of four elements — earth, water, air and fire, the heavenly bodies are formed from a special “heavenly substance”, a fifth element, which is ether; and this is why they are so perfect, immutable and indestructible. When Galileo directed his spyglass to the sky, it was a tacit recognition of the fact that, first, heavenly and earthly bodies are qualitatively homogeneous and, secondly, there are the same laws governing the heaven and the earth. Developing this analogy with the Galilean revolution in natural science, it is possible to say that today we are standing on the threshold of the removal of a fundamental boundary between the physical and psychical worlds. But while Galileo insisted on the ontological homogeneity of the lower and upper worlds<sup>29</sup>, we should postulate the symbolic complementarity<sup>30</sup> of the physical and

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<sup>27</sup> Яффе А. Наука и подсознание. — В кн.: Юнг К. Г., фон Франц М.-Л., Хендерсон Дж. Л., Якоби И., Яффе А. Человек и его символы. М., Серебряные нити, 1997. С. 310.

<sup>28</sup> Юнг К. Г. AION. Исследование феноменологии самости. М., 1997. С. 285–286.

<sup>29</sup> As P.P. Gaidenko observes, “the removal of the fundamental difference between the superlunary and sublunary worlds, which is believed to be one of Galileo’s revolutionary discoveries, happened two centuries before”, on the basis of the theological premises of voluntarist theology. One of its most prominent representatives, William of Occam, believed that “all that is created is separated from the Creator by such a vast abyss that the boundary between the heavenly and earthly worlds is no longer of ontological nature and of no essential significance for a theologian” (Гайденко П. П. Волонтиаривная метафизика и новоевропейская культура. — В сб.: Три подхода к изучению культуры. Ред. Вяч. Вс. Иванов. М., 1997. С. 46).

<sup>30</sup> Greek σύμβολον is derived from the verb σύμ-βάλλω — “to unite”, “to link”, “to compare”; man himself is symbolical as the soul and the body, the conscious and unconscious, are attracted to each other, wishing “unity”, “reconciliation” — σύμ-βιβάζω, revealing man only when coupled together.

the psychical.<sup>31</sup> The seemingly fearful “obscurity” and “ambiguity” of the symbol actually means its uncertainty or openness to spreading further into the realm traditionally associated with metaphysics, meta-psychics and theology. In this way, solving today’s problems without repeating old solutions to old problems, we can outline a new paradigm enabling us to overcome the gap between humanitarian, natural scientific and theological knowledge and to pave the way to developing a scientific anthropology that allows the reality of celebrating sacraments and implies the fundamental<sup>32</sup> relationship between man and God in the innermost meta-psychic abyss of his soul.



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<sup>31</sup> Jung himself believed that a tangible link between the realms of matter and psyche could be offered by numbers, first of all, natural numbers. “Natural numbers, if viewed through the prism of psychology, should definitely represent archetypal symbols... It is here that the most fruitful field for further research may lie” (Яффе А. Наука и подсознание. — in Юнг К. Г., фон Франц М.-Л., Хендерсон Дж. Л., Якоби И., Яффе А. Человек и его символы. М., Серебряные нити, 1997. С. 311–312).

<sup>32</sup> Lat. *fundus* — “foundation” is derived from Heb. *\*budh* — (*\*bheudh*) — “abyss”. See, Топров В. Н. Еще раз об и.-евр. *\*budh* — (*\*bheudh*-). — Этимология. 1976. М., 1978. С. 135–153).