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BOOK OF ABSTRACTS

International Conference

"Physics and Theology – Yesterday and Today"

20-22 June 2019, Plovdiv

Plovdiv University "Paisii Hilendarski" 24 Tsar Asen St., 4000 Plovdiv, Bulgaria The conference intends to share scientific experience and knowledge in view of discussing the role played by natural sciences and Physics in particular in the development of ideas and concepts in Theology and Philosophy.

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PHYSICS AND THEOLOGY – AN UNUSUAL CONFERENCE

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The rapid development of natural sciences has led to amazing discoveries that have changed our vision of the world and that keep creating even greater challenges for the human mind. New ideas and discoveries in physics, in particular in quantum mechanics, elementary particle physics, and astrophysics, trigger many new questions, not only for physicists, but also for theologians, philosophers and other social scientists. Even persons with a non-scientific background are excited to learn about natural occurrences such as the Big Bang, Dark Matter, gravitational waves, parallel worlds, the Creation, etc. These phenomena provoke many questions of philosophical, existential and safety character.

The debate between physics and theology has existed since ancient times and is becoming increasingly relevant today. This is not by chance. The ideas in these areas of knowledge play an important role in the formation of a personal view of the world, a responsible attitude towards nature, society and for religious tolerance.

Over time, this discussion has evolved from a complete contradiction of ideas to a tendency of bringing opposing views together, thus creating a uniform picture of reality.

Physics will not lose, but theology may only gain from an open discussion with physicists and other natural scientists. This ongoing discussion is important for any individual, even more so for the young generation. Today's intelligent and knowledgeable person needs scientific argumentation to walk his own way from skepticism to faith. Today the Church needs sciences more than ever before.

THE CONCEPT OF NATURE AND ITS IMPORTANCE FOR THEOLOGY

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Nature is everything that is born and develops (nasci) and that passes away (mori) – in other words, everything that constitutes our life and its environment. The political and economic constellation of Western modernity with the associated self-understanding of man and nature tries to overcome the finiteness of nature. The philosophical, scientific, political, economic, administrative and legal responses in their inner connectedness are based on the interaction of fear and promise of security. Nature is established as a closed world horizon, guaranteed by a deistic world view.

The implicit and explicit conception of nature in modernity suggests infinity (recently strengthened in the transhumanist ideas). The modern concepts of "nature" refuse reconciliation with finiteness. They do not need God for God's sake, but for the sake of self-preservation in the finite cosmos. Here the optimistic idea applies that nature is the reality that can be grasped – and as potentially everything is nature, so everything is graspable and controllable.

The conference will argue that this axiomatic principle has to be reformulated in the following way:

1.1 Finite nature is the reality which I want to seize, but which irrevocably seizes me, at most in death and the end of the cosmos.

1.2 Finite person is finite nature insofar as it is striving to perfect personalization of nature. Christian faith promises this perfection of nature as resurrection in the risen Kyrios.

2.1 The eternal nature of God is the three-personal perfection of God's nature in perfect mutual communication.

2.2 Creation is the reality by and to which the eternal three-personal God communicates His perfection to created finite nature by granting full personalization in Christ by the Holy Spirit.

In short:

In the finite relation between nature and person, nature seizes the person.

In the eternal relation between person and nature, the person perfects and shares nature.

THE WAVE-PARTICLE DUALITY OF LIGHT

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The double slit experiment is the simplest way to illustrate that light has both wave-like and particle-like properties. In one of his famous lectures, Richard Feynman stated about the double-slit experiment [1]:

"..... a phenomenon which is impossible, absolutely impossible, to explain in any classical way, and which has in it the heart of quantum mechanics. In reality, it contains the only mystery. We cannot make the mystery go away by "explaining" how it works. We will just tell you how it works. In telling you how it works we will have told you about the basic peculiarities of all quantum mechanics.

The quantum-mechanical understanding of the double-slit experiment implies a breakdown of causality, and requires the introduction of acausal chance in nature. This has important consequences for philosophy and theology, since it guarantees an open future to the Universe and all its constituents.

In this lecture we will show experiments [2,3] that we have developed for demonstrating the wave-particle duality of light in the classroom.

- R. P. Feynman, R. B. Leighton; M. Sands (1965): *The Feynman Lectures on Physics, Vol. 3.* Addison-Wesley
- [2] T. L. Dimitrova, A. Weis, The wave-particle duality of light: a demonstration experiment, Am. J. Phys. 76 (2008) 137
- [3] T. L. Dimitrova, Antoine Weis, *Lecture demonstrations of interference and quantum erasing with single photons*, Phys. Scr. **T134** (2009) 014003

NEW CHANCES AND CHALLENGES FOR THEOLOGY AS A CONSEQUENCE OF RESEARCH RESULTS IN PHYSICS

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Theology can look forward to happy times. This is a new fact that is perhaps still too close before our eyes to be noticed. The serious sciences have been working for a good hundred years in their best representatives for the benefit of theology and pave the way for an undreamt-of plausibility. Has theology already discovered who its true friends are?

1) Who would have thought hundred years ago that the natural sciences, which like to call themselves "science" par excellence, would acknowledge the authenticity of chance and consequently give up the closed mechanical world view and its atheistic consequences on the basis of their own research?

2) Who would have thought that the subject – established in modernity as "maître et possesseur de la nature" in the centre of insight and action – would voluntarily descend from his throne and, on the basis of his selfexperience and anthropological research, recognize the unassailable primacy of the "other"?

3) Who would have thought that the political and economic theories with which mankind wanted to lead itself into a better future by its own efforts would irrevocably collapse and that the Western democracies would also prove themselves threatened by disintegration, so that the call for "good governance" would again become a common question for mankind?

These unimaginable events have occurred in the last hundred years. They call for a comprehensive work of mourning, which has also not spared theology. As Boethius left us the "Consolatio philosophiae", theology can prove to be a "scientia consolationis". But this lucky perspective does not fall into the lap of theology. It is to be exposed in a careful process of discernment of spirits beyond all the repressions, emergency solutions and false consolations with which the mourning work is circumvented. Theology is at a crossroads. The return to the lost utopias of modernity is only possible at the cost of anachronism. It becomes superfluous in the emergency solutions and false consolations. Its happiness lies – as always – in the truth of things.

A WORLD OF PARTICLES

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Nowadays, science has reached a remarkable understanding on the basic constituents of the world that surrounds us and how they interact with each other. This knowledge is a result of numerous experiments and many theoretical models and hypotheses with predictions checked over the years.

The goal of particle physics is to construct a model that describes the observed elementary particles and the forces between them and that predicts the cross-sections and the decay widths of the observable processes. It is based on the framework provided by the Quantum Field Theory and incorporates the principles of both the Quantum Mechanics and the Special Relativity.

The basic constituents of matter are fermions with spin $\frac{1}{2}$, grouped into three generations of four particles each - the electron, the electron neutrino, the up and down quarks, and their heavier duplicates. They interact with each other through the Electromagnetic, Weak, Strong, and Gravitational interactions. Each fermion has an antiparticle with exactly the same mass and lifetime – for example the positron, the antiparticle of the electron predicted by Dirac [1] and discovered by Anderson in the Cosmic rays [2], has mass equal to the electron one and is stable in vacuum. The forces are mediated by the so-called interaction carriers which are different in type for the different interactions - photon for the Electromagnetic, W and Z bosons for the Weak, and the Gluons for the Strong interaction. These mediators are also particles, but possess spin equal to unity. Currently the Standard Model of particle physics includes the description of the Strong and the unification of the Electromagnetic and the Weak interaction in the so-called Electroweak interaction [3,4,5]. Standard Model is often considered the most precise theoretical development in the science history up to now being able to correctly predict measurable quantities with precision of the order of 1 part per 1 trillion, as is the case for electron gfactor [6].

The Standard Model has achieved its triumph in 2012 when its last predicted particle, the Higgs boson, was finally discovered by the CMS and ATLAS experiments at the Large Hadron Collider [7,8]. The Higgs boson is related to the masses of the elementary particles and the breaking of the Electroweak symmetry into two separate Electromagnetic and Weak interactions.

Despite the completeness of the Standard Model, there are several phenomena that make us search for its extension. One of the most striking evidence is the present abundance of Dark Matter in the Universe – it attracts gravitationally the objects but remains unseen through Electromagnetic interactions. Another unanswered question is the lack of larger amounts of antimatter. These questions are subject to numerous present and future experiments which push both directions in increasing the energy of the interacting particles and in increasing the statistics and probe different rare and extremely rare processes.

The presentation will describe the basic concepts of particle physics, its scientific methods and ideas. The focus will be placed on the phenomenology and the experimental checks rather than on the complex mathematical formalism.

- P. Dirac, The Quantum Theory of the Electron, Proc. R. Soc. Lond. A. 117:778 (1928) 610.
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MYSTERIES OF THE UNIVERSE

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In the four centuries that have elapsed since Galileo's discovery of the moons of Jupiter and the phases of Venus, astro-sciences have yielded stunning insights into the structure and evolution of our Universe. Despite these fascinating results, there are some major questions that remain unanswered as of today. In my talk I will address in particular:

• The dark matter problem: There is evidence that the Universe contains ~20 times more matter than the one that can be observed by current instruments. So far, there are only speculations on the nature of this "dark" matter.

• The matter-antimatter problem: For every massive elementary particle there exists a corresponding anti-particle. As far as we can see, the Universe contains only "normal" matter and no anti-matter. The underlying reason is not yet explained.

• The left-handed Universe problem: Elementary particles with spin exist in left-handed and right-handed versions, except for the neutrinos, which are found only in their left-handed form in our Universe. Is there a mirror-universe that contains their right-handed counterparts?

I will introduce these problems and discuss experimental efforts aimed at finding answers. In the past my team at the University of Fribourg was involved in all of these searches [1-3], in which the sensitive detection and precise control of magnetic fields plays an outstanding role.

- [1] S. Afach et al., Characterization of the global network of optical magnetometers to search for exotic physics (GNOME), Phys. Dark Universe., 22 (2018) 162
- [2] J. M. Pendlebury et al., Revised experimental upper limit on the electric dipole moment of the neutron, Phys. Rev. D 92 (2015) 092003
- [2] G. Ban et al., Direct Experimental Limit on Neutron-Mirror-Neutron Oscillations, Phys. Rev. Lett. 99 (2007) 161603

A METHODOLOGICAL APPROACH TO THE ENCOUNTER OF THEOLOGY WITH PHYSICS

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This text suggests the integration of two comparative methods as a basis for the articulation of an Analogical Comparative Theological Approach (ACTA) to the exploration of the encounter of theology with physics. ACTA integrates the method of analogical isomorphism with recent developments in comparative theology and focuses on points of discussion that are specific, relevant and engaging. A proper selection of a point of discussion offers an opportunity for the parallel unfolding of theological and scientific insights in a way that enables a cross-disciplinary enrichment. In this sense, its educational, scholarly and missionary potential is significant. Finally, the ACTA approach is applied to exploring two concepts having a prominent role in both theology and physics: 'energy' [1] and 'creation out of nothing' [2].

The motivation for shaping a more systematic approach to the encounter between theology and physics is two-fold. First, there is very little research focusing on the methodological aspects of the encounter between theology and physics in an Eastern Christian perspective. [3] As a matter of fact, many of the numerous publications in the "Western" part of Christian world seem to lack a solid methodological stature either. Thus, the articulation of ACTA could be a contribution in this direction. Second, there are even less works focusing on how to position such encounter in the context of today's theological and science education. [4] It could be said that the question about the ways of using the constructive encounter of specific themes and concepts from science and theology in a way that enhances the salvific mission of Christian theology and the students' interest in the natural sciences is wide open. Answering this question offers both a challenge and an opportunity for theologians and scientists who would like to open their messages to a broader audience and to society in general. It would require a serious engagement with theological and scientific works focusing on the development of a conceptual mapping of the two fields resulting in the emergence of specific points of discussion that would be able to enrich the content and reach of theological and scientific messages. My sincere belief is that the articulation of ACTA offers a basis for such undertaking.

The ACTA approach is applied to exploring the cross-disciplinary potential of the concepts of energy and creation out of nothing. Both concepts have been the subject of multiple discussions and in 20th century Orthodox theology and physics. What is even more interesting is that both theology and physics have rediscovered them in the first half of the 20th century. In this sense, the two concepts are perfect examples of points of discussion that fit well the methodological spirit of the ACTA approach.

Finally, the discussion provided here demonstrates the educational and missionary potential of ACTA by showing how the comparative scientific vs theological exploration of specific concepts could lead to a deeper familiarization with the theological conceptual apparatus of Eastern Christianity in a way that engages both students of theology and the larger public which might not have had the chance of enjoying the riches its own theological tradition.

- [1] S. Tanev, (2017). Energy in Orthodox Theology and Physics: From Controversy to Encounter. Eugene, OR: Pickwick Publications.
- [2] P. Copan & W. Lane Craig, Eds. (2004). Creation out of Nothing. A Biblical, Philosophical and Scientific Exploration. Grand Rapids: Baker Academics; G. Amderson & M. Bockmuehl, Eds. (2018). Creation ex nihilo. Origins, Development, Contemporary Challenges. University of Notre Dame.
- [3] A. NESTERUK, (2018). Philosophical Foundations of the Dialogue between Science and Theology. *Journal of the Siberian Federal University on Humanities & Social Sciences*, 2. 376-298; Ch. KNIGHT, (2016). An Eastern Orthodox Critique of the Science–Theology Dialogue. *Zygon*, 51(3): 573-591.
- [4] A nice recent exception is the book by John PIDERIT & Melanie MOREY, Eds. (2012). *Teaching the Tradition: Catholic Themes in Academic Disciplines*. Oxford University Press.

ASTROPHYSICS AND THEOLOGY OF CREATION

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The present interdisciplinary discussion on "Science and Religion" is strongly influenced by I. G. Barbour [1] and other authors in the years 1960-1970. Parallels were pointed out referring to quantum mechanics or chaos theory. These authors seemingly made the former sharp conflict between astrophysics and theology associated with the names of Galileo and Darwin almost disappear. Fierce disputes take place today only between the extreme positions of creationists and atheists. However, if the field is narrowed down to the more professional level of "physics and theology", a strange speechlessness among the experts can be noticed today. The two scientific cultures have become increasingly alienated. This has to do with the fact that the above literature on the relation between science and religion belittled the difference between the disciplines. In particular, the different empirical basis was ignored. Science is based on objective measurements and theology on religious experience [2].

In the past, scientists often presented their work and expected theologians to grasp its meaning and relate it to religion. However, the method and implicit assumptions are often not even understood by the experts of science. How could a theologian cross the gap between the two fields? On the other hand, I have listened to theologians presenting philosophical ideas from long time ago, which I could not relate at all to present day questions. I would like to emphasize three basic issues that inhibit a mutual understanding:

1. Since the Age of Enlightenment, the notion of God is generally associated with gaps in the scientific understanding. This is obvious in the concept of the current "Intelligent Design" movement. The notion is also coming up in the discussion concerning the fine tuning of the universe. This is in contrast to the biblical notion of God.

2. I have met science colleagues who seriously claimed that only measurable things are real. What cannot objectively be observed is an illusion. This would make most of life and even the motivation for science an illusion. Reality is more than science can perceive.

3. Since Galileo science is based on experiencing reality, scientists therefore are used to ask for the empirical base of any theological statements. They avoid philosophical principles and religious dogmas. What are the pertinent religious perceptions? What happens in the brain when humans experience God? Theology must face the question of its empirical base, give relevant examples or discuss the psychological processes.

There was very little truly interdisciplinary discussion, in which the participants made a serious effort to understand each other. A new beginning of the conversation is necessary. It must start from the elementary things that physics and theology have to say to each other in order to get into a real dialog [3].

To really advance the interdisciplinary encounter, proponents have to cross the gap between the fields. Theologians should experience science first hand, and scientists should express their beliefs in theological terms. To find yourself on the other side is a truly exciting experience and yields promising results.

- [1] I.G. Barbour, Issues in Science and Religion, (Prentice Hall, 1966)
- [2] A.O. Benz, Astrophysics and Creation Perceiving the Universe Through Science and Participation, (Crossroad, 2016)
- [3] A.O. Benz and S. Vollenweider, *Dice or Design? Physics and Bible in Dialog*, (Crossroad, in print), translated from German *Würfelt Gott?* (Topos, 2015)

ON THE RELATION OF DIVINE INTERVENTION AND LAWS OF NATURE

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There is a long tradition of arguing that God or other transcendent entities, given such entities exist, would not be able to intervene in the physical world [1]. Although this thinking is often viewed as common sense, one may rightly ask for the justification of this far reaching view which is based on the claim of causal closure. This claim requires that every event is determined by physical processes governed by the laws of nature. If this reasoning was correct, there would be no room for divine intervention of whatever kind. Most obviously, there would be no room for miracles, but also mental interactions like revelations of God in whatever way would be impossible.

This view has had a profound impact on theology. Schleiermacher redefined the term miracle [2] and later Bultmann reinterpreted accounts of the New Testament in accordance with the concept of clausal closure. He concludes that by the knowledge of the powers and laws of nature there is no room left for transcendent intervention and that humans are not open to the influence of spiritual powers [3].

Presently there seems to be a new openness for the consideration of the possibility of miracles. An intuitively helpful description of the relation between divine intervention and the course of nature was earlier on given by C. S. Lewis [4]. Philosophically based arguments have been put forward by various contemporary authors, see e.g. Refs. [5 - 7]. From a physics point of view, it is easy to demonstrate that laws of nature on their own do not determine physical events. This seemingly simple statement has, however, far reaching consequences for the question of divine intervention [8].

In addition to the discussions mentioned above, there are a huge number of observations indicating that divine intervention has really happened and is still happening, see e.g. [9]. An extensive as well as systematic study on the occurrence of miracles throughout ancient and recent history in and outside Christianity was presented by Keener [10]. Keener also discusses various explanations and criticism on reports of miracles and concludes: "Many healing claims involve blindness, inability to walk and even raisings from the dead; other claims involve sudden changes in nature after prayer. Despite some debatable instances, some other cases are fairly clearly extraordinary. It seems to me that to dispute that such phenomena have sometimes occurred is not really possible to open-minded people." [10, p. 599]

In this presentation I argue that causal closure does not follow from physics but rather is a metaphysical principle. I investigate the nature of laws of physics using classical mechanics as a simple example. Considering probabilistic processes present in quantum mechanics or deterministic chaos with respect to divine intervention will elucidate the question, whether divine intervention can be uniquely identified.

- L. Feuerbach, *Das Wesen des Christentums*. Yazzybee Verlag Jürgen Beck, Altenmünster (2016). (first published by Otto Wigand, Leipzig 1841)
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- [5] A. Plantinga, Where the conflict really lies Science, religion and naturalism. Oxford University Press, Oxford (2011)
- [6] R. A. Larmer, *The Legitimacy of Miracle*. Lexington Books, Maryland (2014)
- [7] D. von Wachter, Miracles are not violations of the laws of nature because the laws do not entail regularities. Europ. J. Philosophy of Religion 7, 37-60 (2015)
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FAITH AND SCIENCE – A PERMANENT BASIC DISCUSSION

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In the very beginning, we have to point out that there is no question of opposition or conflict between these two fields of human spiritual activity faith and science. Faith and science are two great spiritual figures complementary to each other and not mutually exclusive. They are two manifestations of the human spirit that are moving and contacting at different levels. Science and religion have autonomous areas of interest and research, which respond to different values and needs of the single human being. Science researches the mysteries of creation, deals with the researchable, while religion deals with the mystery of the Creator, the super sensory. They are two circles tangential or intersecting, but not identical or conflicting. Therefore, the relationship of faith and science cannot be contradictory or hostile, but is dialectical. This is because they have a common starting point in the spiritual essence of man and essentially aim at achieving the truth and securing the happiness of the man. They are judged, however, together or separately, as to whether they lead man to humanization or to dehumanization.

When each one (faith and science) is confined to its area of competence, there is no conflict or opposition. If often earlier cases of conflict were presented, this is due to ideological prejudices of some scientists who have crossed the boundaries of science and have dealt with supernatural issues. Others, again in the Enlightenment period, deified the logic, while others rejected in advance what is related to metaphysical issues. Probably also some Christians face, with mistrust and suspicion, the scientific theories and discoveries, thinking that their faith is at risk.

In the antiquity it was said: «Ούτε η γνώσις άνευ πίστεως, ουθ' η πίστις άνευ γνώσεως» (Κλήμης ο Αλεξανδρεύς) – "Neither knowledge could exist without faith, nor faith without knowledge" (*Clemens of Alexandria*). In this line of thought we would say: "Faith and Science are different, but not indifferent to each other ... They differ in the method, in the means, in the goals, but not indifferent to each other, neither remain indifferent to man and history, nor again are irrelevant to our civilization." [1].

The temptation of the human mind to claim that it gives the last, ultimate knowledge leads to the fact that science is mythologized. Properties are attributed to science, which it does not own. It displaces the faith in God and requires faith in itself. Thus science becomes an ideologized belief, assumes the premise that there can be no real knowledge outside of it. This new faith turns into a modern, sustained myth. At the heart of this myth is the belief that everything in science is proved, and that through it ultimate, full knowledge is given [2]. For example, natural sciences always claim to be based on empirical experience, on evidence. However, their preconditions are never proven.

Yet, what does the future of the relationship between faith and science look like? The optimistic view of this issue, to which we adhere, finds the hopes for a harmonious coexistence of these two areas of the human spirit. That is why we sincerely wish science to believe it, and faith to be convinced.

THEOLOGY OF THE MISSION OF THE CHURCH IN LIGHT OF QUANTUM PHYSICS

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This paper tries to agree the theological view on Church's mission with the scientific discoveries of quantum mechanics and to show the complementarity of understanding of the world by both sciences (provided theology is seen as a science revealing who God is). For centuries, Christians have been convinced that they do the mission of the Church but this view was challenged in the last several decades by the notion of Missio Dei – the mission of God – where mission is seen as a movement from God to the world, and the Church is viewed only as an instrument for that mission [1]. Some interpretations of modern quantum mechanics see it as relational quantum mechanics [2], other authors, making analogies with the fact that science has discovered the intrinsic relationality of the physical and biological world, affirm that physics in fact points to the "relationality" between God's three Persons within the Trinity and between God and the world because God is love [3]. Theologians today maintain that "to participate in mission is to participate in the movement of God's love toward people, since God is a fountain of sending love." [4-1]

Physicists' knowledge and understanding of the world expands, and so does theologians' understanding. Only today Christians came to the view that the mission of God "is not competition with other religions, not a conversion activity, not expanding the faith, not building up the kingdom of God; neither is it social, economic, or political activity" [4-2], we now acknowledged that "God's redemptive action precedes the Church" [5] and that "mission is not ours, mission is God's" [6]. Following Western Christian theologians and missiologists, even within Orthodoxy theologians came to confirm that the "Author of mission can only be God, not the Church or not any other human organization" [7] while acknowledging that "neither the Church nor any other human agent can ever be considered the author or bearer of mission. Mission is primarily and ultimately the work of the Triune God." [4-3] These affirmations in no way diminish the importance of statements by Orthodox theologians such as "that the Church is mission and that to be mission is its very essence, its very life" [8].

By reflecting on some concepts of quantum physics (esp. that of entanglement and superposition), theologians today may find it useful to further explain the Trinitarian mystery "as the dynamic divine relationship of perichoresis... interpreted as entanglement" where "perichoresis evolves within the Trinitarian life of God as entangled superposition, relating Creator and creation in mutual interaction" [9]. Today we can affirm a "quantum" understanding of the mission of the Church as Missio Dei to which we as Church have been constantly called to participate: responding to God's call "entangles" us with Him in love and obedience, rejecting the call makes us depart from His love and distorts His plan for the world and for humanity.

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TRANSFORMATIONS IN THE UNDERSTANDING OF TIME AFTER THE INTRODUCTION OF CHRISTIANITY AS REFLECTED IN THE ANCIENT BULGARIAN LITERARY TRADITION

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This report claims that the introduction of Christianity in Bulgaria leads to a radical transformation in the understanding of Time that can be described as a transition from an "Old Testament" to a "New Testament" axial age.

In the pre-Christian period, time is thought of as an endlessly repeating loop where the story of humanity and the universe recreates itself in analogical or at least typologically comparable forms. Evidence for this type of thinking are the ancient Bulgarian stone epigraphs where we can find wordings surprisingly similar to ones from the Old Testament (for example "a man can live well, but still dies and another is born" as opposed to "One generation passeth away, and another generation cometh: but the earth abideth for ever"- Eccl. 1:4). This understanding of time as a repetition and a circle is of course also common for the Slavic pagan tradition where the ritual "calendar" has an agrarian character. Its purpose is the successful reproduction of the natural phenomena (plants, animals, and people).

With the introduction of Christianity, the Bulgarian novices escape the loop of the "eternal returning" (after Eliade) to step on the path of history. This is a transition to a linear understanding of time which now has its beginning (Genesis), middle (God's incarnation) and direction to an expected finish (the End of Times and Judgement day).

This change of the model of looking at the world is paradoxically accompanied by a traumatic turn in the specifics of the Bulgarian autonarrative where for centuries there exists no self-written history. The paper offers some hypotheses regarding the reasons for this silence.

DYNAMICS OF SCIENCE-RELIGION INTERACTIONS: PRACTICAL, SOCIAL AND POLITICAL IMPLICATIONS

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Natural sciences study and formulate cause-effect relationships in nature and try to discover the essence, logic and design behind phenomena observed every day, analysed within the framework of horizontal relationships of the types: "nature – nature" and "human – nature". Theology, on the other hand, is mainly focused on studying the attributes and energies of God as well as the vertical relationships of the type "God – human".

Both natural sciences and theology can be regarded as tools to understand the world around us, nature and life respectively from two different perspectives: horizontal or natural (by experiments) or vertical (supernatural by faith). As such, both reveal the divine nature of the Creator. Within the paradigm Creator – creation, theology also has an interface with the horizontal relations including important relations of the type "human – human" (the domain of social sciences). The relations between science and religion and the areas of their interactions are broad. They can be regarded in multiple planes and have implications in many areas of human life. In this sense, the analysis of such interactions is a very challenging task.

We will consider some aspects of science-religion interactions on the base of our experience in the field of natural sciences as well as on the base of Judeo-Christian theological frame, culture and tradition. We will try to relate some of the basic principles of science and theology and to show the biblical roots of scientific method. During human history, both science and theology have been under constant attack. When any of the two fields is moved away from its true foundation, conflicts are observed. We will consider such controversies between science and religion as "anomalies" and abuses in both fields, which are falsely represented as a conflict between science and theology. We will regard these anomalies also in the context of modern day globalization, social and political activities. We will try to show that both Christian faith and true scientific method help for discovering the human identity and the full human potential. On the other side, science "anomalies" where science is treated as an idol in a cult-like approach and religious fanaticism encourage definitions of false human identities, idolization of human capabilities and large distortions in personal, social and political aspects.

RETURNING TO THE FUNDAMENTALS: THE FALLACY OF SCIENTIFIC ESCHATOLOGY

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This report contends that science, as primarily defined, perceived and practiced today, lacks the resources to provide adequate knowledge and explanation of the most important questions about the meaning of man's life and the future of mankind. Such answers are found only in God and His book, the Bible. Yet, due to ideological influences science has become a tool to bring forth eschatological scenarios about the future of life on earth, as we know it.

The ideologization of science toward atheism has been one of the most detrimental trends to any effort to reconcile theology and science in modern and postmodern times. The ideologization of science under communist regimes was mandatory, as if knowledge of the natural somehow denied the existence of the spiritual. More so, this perceived existential threat justified any deviation from atheistic norms and was punishable most severely by the state. In much of the Western world today the push for science to embrace atheism, as its fundamental principle of interpretation of the facts and the objects of study, comes without any militarized or violent revolution but is not less detrimental to the ability to reason in general.

Thus, the replacing of the purpose of science from exploring the "how" to explaining the "why," has turned it into *scientism*, a rival "theology" of sorts. As such, science seems to seek to denounce, or at least compete with, the existence of God by its often repeated assertion that human knowledge may not be taken as valid if it extends to the realm of the spiritual [1]. The natural end-result is that science turns into a moral and spiritual standard, without any reference to a solid source of morality or spirituality; it engages in projections of the future, aiming at the betterment of man and his society, or at the prediction of the end of civilization. Scientific projections thus encroach on the idea of salvation, eternity, and morality – all matters concerning the knowledge of God and theology. Futuristic scientific projections of studying and explaining the future.

On the contrary, the Bible and the New Testament remain within their realm, studying God's revelation to man. Thus, theology legitimately

presents a solution to man's fundamental problem by pointing to the existence of God and man's related accountability and need for salvation; a knowledge independent, inaccessible, and alienated from contemporary popular and scientific pursuits.

There are three aspects that are critical in the formation of what we call knowledge: a) worldview; b) method; and c) interpretation [2]. Without a worldview any method or interpretation is baseless. A worldview which acknowledges God is significantly different in the moral, personal and social aspect, compared to a worldview in which God is absent.

A fundamental question to ask then is if we even need to reconcile theology and science? As science does not seem to grasp the questions of faith, hope, and love (and why the greatest is love) [3] so it cannot answer the questions of morality, spirituality, men's need of God and salvation; science seems to offer no concept of the coming new world in which Christ will reign supreme. Hence, a return to the fundamental purpose of science involves abandonment of the attempt to reject the existence of God and to shape man's future and mankind's salvation.

Science cannot solve the deep moral and spiritual issues of man on its own. It may turn to theology for moral and spiritual reference, or it can reject theology as a reference point and in doing so compete with God's revelation by providing its own. However, eschatology will always remain an issue of faith, morality, and reason, rather than one of mere dissection of rocks and rats.

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PHYSICS AS VOCATION – NOW AND IN THE PAST. A CHRISTIAN PERSPECTIVE

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The term "profession" has various etymologies in the European languages – all of them pointing to its Christian origins. In my talk, I will focus on the understanding of profession as a vocation and how this applies to science and, in particular, to physics.

Contrary to the still influential Enlightenment myth about the warfare between science and religion, the Christian culture in Europe has been indeed the medium which enabled and stimulated the emergence of modern science [1, 2, 3]. The Christian worldview have not only encouraged the experimental approach and the intelligibility of the world but shaped the understanding of the scientific enterprise as a vocation worth of a life-long dedication. Thus, it is instructive to address issues like: What attitude has driven some of the fathers of modern science as they were laying its foundations? How did their scientific enterprise and the Christian worldview interact?

Some evident trends in the postmodern times are the decline of popularity of science as a profession worldwide and the pragmatic approach to it as a temporary enterprise, without reference to worldview questions. Is the "vocational perspective" on science still relevant in 21st century, in the era of the project-funded research? My answer is positive and I will try to show that exactly this perspective could save science as one of the unique cultural institutions of the humanity.

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A DIALOGUE BETWEEN SCIENCE FICTIONS AND THEOLOGY?

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The topic of this study is definitely a challenge for both science fiction and theologians. Theoretically, each of the two spheres addresses diametrically opposed areas of life. Science fiction seems to be based on scientific foundations. It is believed to be a flight of human thought, fantasy and experience of theoretical quests, prognostic discoveries, and development of the universe. But it also brings in a potential opportunity for discoveries and finds if you resort to the help of ... The Art Field. In other words, science fiction is a particular combination of science, sciencelikeness, flight of thought, fantasy, and in general ... art. However, here we have to add another feature. In fact, on the one hand, science fiction is in particular a continuation and even a realization of, in general, the atheistic, evolutionist, and even many perceptions of the field of Naturophilosophy. If so, we should conclude that Theology and Science Fiction cannot have anything in common and are mutually exclusive. With this research the author wishes to challenge 1. himself, 2. colleagues - believing Christians, respectively scientist-creationists and, to a certain extent, provoke a reason for reflection, a debate, but also for scientific, creative and theologicalethical quests in this direction. Resources for this will be a review of science fiction-related literature as well as examples of the entertainment genre of art, namely, film art and comics. Relevant films such as Star trek, Avatar, Contact, Valerian or the City of the Thousands of Planets, etc., have been identified, which in their authors' view show significant finds about possible and probable tangencies between Theology and Science Fiction.

What are the challenges in this case? It is assumed that science fiction is a direct consequence of the Evolutionary Theory, which itself, though created by the son of a Protestant pastor (Charles Darwin), has become the basis for Atheism and the socialistic movements and communism built upon it. On the other hand, however, Christians themselves have embraced this attitude, and as Evolutionists in practice attack Christianity, Church and religion, they have a negative attitude towards any ideas that show closeness to Naturism or Dialectical Materialism. And since the two areas (science and religion) look like irreconcilable enemies, one way of dialogue between them can be achieved by ... jokingly perceiving life with the help of a sense of humor. The first more serious attempts to entertain fun in the field of cinema fiction are in the first film of the *Star Wars* saga, set under No. 4. There, in Cosmic Restaurant, we see strange creatures that look something like in between little elephants, piglets and mollusks performing jazz music on various instruments. Equally strange waiters carry drinks and food trays to customers at this restaurant. Similarly, but much more comically, possible alien creatures are represented in the movie *Men in Black*.

A slightly more serious point of view is in the Hollywood production *Contact.* Its creators have wisely circumscribed the idea of presenting any images of alien life forms by displaying them in familiar terrestrial and humanoid forms, as is the case with the father of the main heroine whose appearance is perceived by the representatives of the unknown civilization that left the way for instantaneous movement into the space of enormous distances. A pastor has also been involved in the film history, showing the respect of filmmakers to churchmen as a public authority. The creators of the film end up with the fundamental statement that the universe should be populated. Because if it is not, then it would mean "a net loss of space".

So is there a possible dialogue between the final views of popular theology and the popular understanding of evolutionary evolution and the existence of the world without Creator in it. On a similar question, the answer is: No. In order for a dialogue to take place, it is necessary for each of the two positions to compromise their understanding and to make changes to them. 1. The evolutionary worldview must accept the idea that Creator exists. 2. And the compromise on the part of Christians should be that He may have created forms of life beyond our knowledge of Him. Something like this is in the film *Europe*, although not clearly stated, the shape of a huge lifelike mollusk appearing at the end of the film is the fruit of Evolution, according to the creators of the film or a Divine Creature.

THE GOD WHO PLAYS... HIDE AND SEEK

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In modern perceptions, the concept of God is connected with several basic presumptions, which in most cases function as axiomatic claims. Three such presumptions are that if God exists: a) He is invisible, b) He is a person, and c) He is as a category superior to us – intellectually, morally, in His abilities etc. For the purposes of the current presentation, we will accept these three statements as credible.

From the notion of God as invisible, it follows that He is undetectable to the naked human eye. From the notion of Him as a person, it follows that the experimental description of God should be an impossible endeavour because unlike physical phenomena, which, in general, given the same starting conditions lead to the same end results and thus allow for prediction, a person (as our historical experience shows) can react differently under the same starting conditions, and the factors that contribute to these different reactions are so numerous that they tend to infinity, making predictions close to impossible. From the notion of God as categorically superior to mankind, it follows that it is highly improbable that He would come under our scrutiny as an object of observation – rather He is the observing subject.

What has been said so far leads us to the conclusion that the *supernatural* God is not cognoscible through the empirical approaches of the *natural* sciences. Thus we arrive at the foot of a quintessential Christian teaching – the doctrine of "revelation," or, in other words, of God's self-revealing to man as the primary means of knowing God.

For most of the history of science, revelation and rational empiricism have not contradicted each other, but have been in a kind of balanced coexistence. Most of the great physicists of the past were also believers in the revelational truth (a fact that Dr. T. Velchev devotes more attention to in his lecture). However, one of the axiomatic assumptions of our time seems to be the belief that faith and scientific knowledge are in an inherent and inevitable opposition, and the scientist must necessarily be an atheist or, at the very least, an agnostic. The limitations of such a short discourse will not allow us to touch upon every aspect of this problem. That is why we will focus only on one side of it - the false notion that, within the framework of the aforementioned opposition, Christian theology is hostile to science.

The concept which I would like to present briefly here is that from a Biblical standpoint we could confidently claim that the God of Christian theology has revealed Himself to us as One who enjoys the scientific progress of mankind and that the people devoted to scientific activity are, in fact, following subconscious inner urges set in the human heart by the Creator himself. In order to correctly understand this statement, we will first look at the foundational elements of the Christian metanarrative: creation-fall-redemption. Then we will pay special attention to some basic doctrines / claims of Christianity: We will present "the God Who plays" the Creator who creates not only for His own enjoyment but for ours as well. Then we will see "the God Who plays hide and seek", i.e. the One who enjoys communicating with His creatures and has intended the scientific interest as one of the means (though not the main) for the interaction between the Creator and the people. Finally, we will become acquainted with the Christian notion of "those who play with God" mankind as a whole (and the scientists in particular, who create and enjoy together with God and in His likeness). Finally, we will mention some of the limitations of the present discourse and outline possible ways to deepen our knowledge of the topic beyond the scope of this conference.

IN THE 20TH CENTURY, THE FORMER THREAT FROM NATURAL SCIENCES TURNED OUT TO BE AN OPPORTUNITY FOR THEOLOGY

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Abstract not available at the time of printing

THE LIFE AND FAITH OF A SCIENTIST

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Professor Henry Schaefer is the author of more than 1600 scientific publications, with a large majority appearing in the Journal of Chemical Physics, Journal of the American Chemical Society or the Journal of Physical Chemistry. A total of 300 scientists from 35 countries gathered in Gyeongju, Korea for a six-day conference in February, 2004 with the title "Theory and Applications of Computational Chemistry: A Celebration of 1000 Papers of Professor Henry F. Schaefer III." In May 2010, the University of California at Berkeley hosted a large international conference in Professor Schaefer's honour, the title of the conference being "Molecular Ouantum Mechanics: From Methylene to DNA Beyond." and Simultaneous with the Berkeley conference was published the book Selected Papers of Henry F. Schaefer III, Edited by R. J. Bartlett, T. D. Crawford, M. Head-Gordon, and C. D. Sherrill.

Professor Schaefer's major awards include the American Chemical Society Award in Pure Chemistry (1979, "for the development of computational quantum chemistry into a reliable quantitative field of chemistry and for prolific exemplary calculations of broad chemical interest"); the American Chemical Society Leo Hendrik Baekeland Award (1983, "for his contributions to computational quantum chemistry and for outstanding applications of this technique to a wide range of chemical problems"); the Schrödinger Medal (1990); the Centenary Medal of the Royal Society of Chemistry (London, 1992, as "the first theoretical chemist successfully to challenge the accepted conclusions of a distinguished experimental group for a polyatomic molecule, namely methylene"); the American Chemical Society Award in Theoretical Chemistry (2003, "for his development of novel and powerful computational methods of electronic structure theory, and their innovative use to solve a host of important chemical problems").

The Journal of Physical Chemistry published a special issue in honour of Dr. Schaefer on April 15, 2004. In 2009 and 2010, the journal *Molecular Physics* published seven separate issues in honour of Professor Schaefer. He was elected a Fellow of the American Academy of Arts and

Sciences in 2004. He was the recipient of the prestigious Joseph O. Hirschfelder Prize of the University of Wisconsin for the academic year 2005-2006. He became a Fellow of the Royal Society of Chemistry (London) in 2005. He was among the inaugural class of Fellows of the American Chemical Society, chosen in 2009. He earlier became a Fellow of the Alfred P. Sloan Foundation, John S. Guggenheim Foundation, American Physical Society, and American Association for the Advancement of Science. In April 2011 he received the Ide P. Trotter Prize of Texas A&M University. Recent recipients of this prestigious award have included Nobelists Charles Townes, William Phillips, Francis Crick, Steven Weinberg, and Roald Hoffmann. In 2012 he received the Alexander von Humboldt Award. In March 2012 Professor Schaefer received the \$20K SURA Distinguished Scientist Award, given to the outstanding scientist in any field in the southern USA, from Missouri to Texas to Florida to Virginia. In April 2013, at the Chemical Heritage Foundation in Philadelphia, Dr. Schaefer received the Chemical Pioneer Award of the American Institute of Chemists. In January 2014 he was named by The Best Schools as one of "The 50 Most Influential Scientists in the World Today." In March 2014 he received the American Chemical Society Peter Debye Award in Physical Chemistry. In February 2016 he was elected an Honorary Fellow of the Chemical Research Society of India. In May 2019, he will receive the Gold Medal of the American Institute of Chemists. Seven of the past 14 recipients of the AIC Gold Medal have received the Nobel Prize.

For 30 years Professor Schaefer has been one of the most highly cited scientists in the world. The Science Citation Index reports that his research has been cited more than 69,000 times. Professor Schaefer's Thomson-Reuters H-index is currently 119. He has published 155 Citation Classic Papers. His research involves the use of state-of-the-art computational hardware and theoretical methods to solve important problems in molecular quantum mechanics.

Professor Schaefer is also well known as a student of the relationship between science and religion. One or more of the lectures in his popular lecture series on this important topic have been presented at most major universities in North America, including Harvard, Stanford, Berkeley, M.I.T., Yale, Princeton, and the Universities of Alberta and Toronto. The Veritas Forum has called on Professor Schaefer to give major lectures at 18 of its conferences. Dr. Schaefer has also presented science/religion lectures in many universities abroad.

CHRISTIAN FAITH IN A POST-CHRISTIAN EUROPE: OBSTACLES AND OPPORTUNITIES

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In modern Europe a twofold challenge both of an intellectual and a socio-political kind stands against Christian faith. The first creates a false alternative between a "scientific" worldview and the Christian faith, while the second creates a false alternative between a "progressive" mindset opposed to a seemingly suppressive, fearful, and outdated Christianity. This view is often substantiated by historic or present misconduct of "the church" [1]. Even many Christians are emotionally and mentally immobilized by adopting such views while they try at the same time to argue for Christianity within the mental paths determined by these views. The challenge is therefore to understand and overcome misleading mindsets and misconceptions.

The first obstacle requires a close look at the relation between (natural) science, worldviews and Christian faith. There are unjustified atheistic, or more precisely termed naturalistic, claims about "science" to give an explanation of every aspect of the universe starting from its origin to the appearance of consciousness, culture and religion [2]. The problematic aspects of such claims have not only been pointed out by Christians [3, 4], but have also troubled secular philosophers [5].

The second obstacle is deeply rooted in the tradition of Marxism and uses the claims described above to justify a reshaping of society. If matter and natural laws are all there is, then man is just a graduate animal and a system of highly perfected economic production should produce a higher type of human beings [6]. As is well known, this approach not only produced economic disaster, but also about 100 Million people were killed by communist regimes during the last century [7]. Consequently, Neo-Marxism or Cultural Marxism changed its focus towards the culture of the societies it attempts to influence. Here, the Frankfurt School in Germany [8, 9] and the activities of its protagonists in the US [6, 8] have profoundly influenced western societies. Although today's ideological scenery is far from homogeneous, its successors have deeply shaped modern western thinking. Due to the abuse and redefinition of terms such as e.g. scientific thinking, rationality. freedom, justice and equality, many Christians tend to be obliged to the corresponding agenda without realizing the underlying sources and goals [10].

As the concepts described above are deeply destructive, not only Christians are getting increasingly aware that something is going wrong [11]. Therefore, there is increasing opportunity to demonstrate that the Christian faith not only gives a well-founded basis for reasoning but also is a valid foundation for individual freedom (not only for Christians) and the welfare of a society [12, 13].

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PHOTOPOLARIMETRICAL STUDY OF BLAZAR-TYPE AGN OJ287 – RESULTS AND DISCUSSION

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We present the results of a photopolarimetric study of the blazar OJ287. Results from observations in the period November 2012 – January 2015 are published in [1], [2] and [3]. The observations were conducted using the Focal Reductor FoReRo-2 of the 2-meter RCC telescope of the National Astronomical Observatory (NAO) – Rozhen. The observed change of the position angle (P.A.) as reported in [3] corresponds to mean rotation of the plane of polarization of 6.23 \pm 0.05 deg/day, which is in good agreement with previous measurements. We discuss this as an indication of a correlation between the change of brightness in R-band and the change in the degree of polarization.

Besides providing insight to the most energetic phenomena in the Universe, the study of Blazar-type active galactic nuclei (AGN) such as OJ287 is important, since AGNs can act as restarting events in the evolution of life on potential exoplanets in the habitable zones of certain stars. The role of AGN evolution as a pathway to study the history of formation of galaxies, mainly through mergers, is also discussed. This is crucial to understand the way our Galaxy, the Milky Way, formed and study the potential Galactic habitable zone in the past and in the future.

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HUMANITY+

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> The best way to predict your future is to create it. Peter Drucker

Every progressive movement such as evolution is intertwined with the concepts of milestones and endless perfection. Even more – no progress is linear. In the case of Homo Sapiens it is more of adding and repairing, expanding and obliterating limitations. Some of them seem on the verge of fiction – like flying and breathing under water, others like enhancing humans' intellectual and physical powers seem at closer reach. There is one rather undying dream though which sparkles through human history and it is the strive for immortality. And for many this is the meaning of life.

Human beings are living in constant utopian vision and dystopian fears. Both have deep roots within our historical and ideological discourses.

Transhumanism – a threat or a cure for the humanity? The end of religion or the birth of gods? The big question which triggers the lovers of technologies is whether machines are going to override moral norms set by humans leading to misbalance between what is necessary and allowed. What will be the ultimate criterion for right and useful in the age when technology is authorized to decide life and death? Do we need to correct our bodies, to augment our capabilities, to postpone death or even to eradicate it? These are some of the topics discussed in the present paper.

Key words: transhumanism, cybernetics, robotics, orthodoxy, values, digital age, religion, futurism, pluralism, evolution, humanity

FAITH AS AN INTELLECTUAL, EMOTIONAL AND SPIRITUAL ENDEAVOR

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This article is dedicated to the problem of faith as an intellectual, emotional and spiritual endeavor of human individuals.

Different aspects of religious faith and its relevance to reason, will, social and civilizational identities are taken into account. The author proposes the perspective of regarding faith not as a subjective chain of decisions or as a random choice of beliefs, but as a cognitive process, where all the creative and cognitive potential of human spirit is involved. What is intended here is the effective abolition of the traditional dualities: faith and reason, faith and knowledge, faith and reliability. Faith as a specific act of knowing has both intellectual and empirical features and demonstrates a unique approach to the core of reality, which approach is different to the traditional philosophical and discursive approaches to the matter. Faith is penetration into reality that is triggered by "the knowledge inherent in the human heart", in other words – by intuition, and furthermore – by the stock of emotional and artistic knowledge, as well as by the deep introspection and compassion – all of which are paths of knowing neglected by the normative rational and positivistic theory of knowledge.

In the first section of the article named **"Faith as an universal human phenomenon"** the universally dominating significance of faith is exposed and analyzed. In the second section **"Faith as a form of trust"** the author is clarifying his view about the deeply personal and existential character of faith in the context of the relationship between "me and others". In the third section called **"Faith as a solution"** the point of having faith as a foundation and source of will is disputed. In the fourth section **"Faith as risk"** we are commenting the existential risk arising from the conscious maintenance of a certain choice of a given belief system. In that context the famous "Pascal's wager" is also analyzed. In the fifth section of this article **"Faith as power of will"** the main topic is the initiation of the creative personal reverence for reality itself as given, thoroughly executed in the course of life, in order to accommodate our natural place within, in the form of "a choice for a certain world of activity". In the sixth section **"Faith as a socially determined act"** there is a discourse about faith as social activity

and initiative. And the last seventh section called **"Faith as a civilizational choice"** talks about the act of having faith as having a specific civilizational choice as an individual, which choice can reasonably contribute to society in general.

Conclusion: As a specific method for obtaining knowledge, not based on the objectifying approach derived from the subject and heading for the given object, faith is rather a holistic approach of compassion and mutual trust in the framework of all the autonomous acting parts going "from myself to you" in the attempt to clarify existential matters. Hence faith is capable to provide a deeper insight into reality and to secure more reliability of the objectifying traditional methods of knowledge, too much depending on existing instruments for their purposes. Differing from the scientific method that has an outspoken analytical character and is using fragmentation and reduction as usual tools, the "approach" of faith is synthetic and holistic; it articulates things in a larger scale, acknowledging the existence of underlying natural structures. Faith is extremely important phenomenon and dominates the human presence in the world. It can reveal new, unspoken horizons for the otherwise "conventional" human spiritual endeavors.

ON THE EVOLUTIONARY STAGES OF KNOWLEDGE

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Man is a thinking being. Thus, his ability to obtain, process and work with knowledge is a basic characteristic and energy of his evolution. Therefore, man is not something given, but rather something that has to be attained.

In this paper we follow some important evolutionary stages of these abilities. We analyse and compare the theories of A. Comte and V. Tolev of evolution from sensory, through theoretical – in the fields of religious, scientific and philosophical thinking – to intuitive knowledge.

The sensory knowledge forms both the process of thinking and the primitive religious mind. The theoretical knowledge divides the abstract sciences, which are based on logic and proofs, from the religious systems, which are based on faith and dogmas. It is philosophy, however, which remains the bridge between them.

The affirmation of knowledge has caused man to fight a millennia-old battle to overcome the animal origin within himself in order to set himself free. The time is yet to come when man will also set himself free from the rule of the human (thought) origin within himself in order to bring forward the universal inscribed within him. Thus, through the battle between thought and intuition man will become one with the Universal being (God, the Creator, the supreme being, cosmical mind, etc.).

IS IT POSSIBLE TO PRESENT A SCIENTIFIC ARGUMENTON FOR THE EXISTENCE OF GOD

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The scientific theological paper I present to your attention is in fact an attempt to offer, in a systematic and concise manner, a quantitatively new argument for the existence of God, duly developed in my book "The Great Designer. An Extramural Debate with Stephen Hawking". The argument has been unfolded in two stages:

I. Mapping *the demarking line* between *consciousness* and the *blind line case*. That is, which events can be carried out only as a result of a logical conscious activity but cannot be carried out through random processes.

In this regard I propose a new universal theoretical model consistent with all observed material structures, both physical (atoms, cosmic systems, universe), and biological (living organisms, human beings). The model is strictly scientific, because it has got a mathematical system allowing empirical verification of its predictions. Thus – according to this model – material structures:

1) It is no possible for material structures to be formed and maintain sustained to processes of absolute chaos.

2) Material structures cannot be transformed into one another through random modifications nor by gradual or jump-like (quantum) transition. [In Biology, the first type of processes is called fillet-like gradualism, and the second one -a dotted-line equilibrium.].

The aforesaid implies that this model *prohibits* (in the language of Physics) the evolutionary processes yet affirms the construction of material structures only as a result of conscious intelligent activity. *In other words, this model is a counterpoint to Darwin's evolutionary idea and the former proves the latter's untenability*.

II. Based on the biblical narrative of Creation and the evolutionary doctrine, *predictions* have been made about what is to be expected in Cosmology and Biology.

The empirical verification of the two forecasts has been conducted by presenting the latest scientific research results in Physics, Astronomy,

Cosmology, Geology, Biochemistry, Molecular Biology, Genetics, Anthropology, etc.

CONCLUSION:

Consciousness is primary, and all material structures can only emerge as a result of its intelligent creative activity!

MEASURING TIME – POTENTIALS AND LIMITS OF GEOLOGICAL DATING

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The ancient Greeks had two concepts of time: *chronos* and *kairos*. While *chronos* represents the continuously progressing time which is, e.g., measured with a sundial or a chronometer, *kairos* is the unique moment, which should not be elapsed, but seized.

The author transfers this concept to geology. In this sense, *chronos-geology* is represented by the typical stratigraphic column which uses, e.g. biostratigraphy for the different geological eras and periods. According to this model, Earth is 4.6 billion years old. *Kairos-geology* instead refers to catastrophes, such as cosmic impacts, tsunamis, mega-floods. Prominent examples are the asteroid impact which led to mass extinctions at the K/T boundary 65 million years ago ('When life nearly died') and the Indian Ocean tsunami of 2004 [1].

Different dating methods will be presented with their strengths and weaknesses [2]. There is the distinction between radiometric clocks, such as the ${}^{14}C$ and U-series methods [3], and absolute clocks, such as dendrochronology and varve counting.

The Grand Canyon will serve as an example for the controversial discussion between the interpretation of the 'Young Earth Creationists' [4] and the paleontological rock dating. Three strong examples will serve as counter-arguments against the Young Earth theory – 'black swans' of Karl Popper's concept of falsification [5].

The concept of *chronos-geology* and *kairos-geology* will finally be transferred to theology. The first page of the Bible shows at least two modalities of God's creation: *kairos-creation* ("Let there be light!", Gen. 1,3), and *chronos-creation* ("Let the Earth bring forth living creatures...", Gen. 1,24). The latter modality may also be called 'evolution.'

Finally, there will be a view on the beginning of time (Big Bang; "Let there be light (energy)!", Genesis 1,3), and on the end of time (Black Hole; "Time will be no more", Apocalypse 6,10).

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THE TRANSITION OF BLAISE PASCAL FROM THE CALCULATING MACHINE TO JANSENISM

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The article is dedicated to Blaise Pascal, a brilliant mathematician and physicist, the creator of the first computer and one of the founders of hydrodynamics and hydrostaticity, who made a sudden transition to Jansenism in 1654.

Born in 1623 in the family of a lover of mathematics, he began to study mathematics and physics at the age of fifteen, progressing extremely fast. He received a royal patent for the calculating machines he created in 1649, while in the meantime he formulated the law bearing his name and perfected the barometer and hydraulic press constructions.

In 1646 Blaise Pascal met two monks from the Port Royal monastery, followers of Cornelius Jansen's ideas. Gradually Pascal became more and more close to the circle of the Jansenists and the society connected with the Port Royal, and he took a firm stance in the religious disputes of that time.

In 1654 Pascal experienced a spiritual turn and until his death in 1662 he is devoted entirely to the recognition of human's complete dependence on God. This is Pascal's view for the way of releasing the man from the real power of the church.

Two events in Pascal's life were crucial to his mental turn – the crash with a chariot on the bridge of Seine, and the following after a few days faint, when he fell into ecstasy, coming to a god-inspired revelation, gripped by horror and greatness, wrote his famous *Memorial*. These two turning points defined the borderline of his afterwards ensued life as a hermit, and most importantly, they set apart physics from metaphysics.

Pascal directed himself to Port Royal, led by his credo, Jansenism, attracted by the courage, the power and the moral purity of his inhabitants. At first glance, this study is difficult to match with Pascal's personality – it denies the will of freedom and leaves the human to the predestination. It turns out, however, that the teaching of predestination stimulates the development of the identity, and creates strong inner confidence and energy of thought. Pascal abandons the traditional path from God to man and

chooses a new one – from man to God, placing emphasis in his "Thoughts" on the human and his essence. The human creates God in his own image and likeness; God is a function of the human.

The man, according to Pascal, is *the middle*, he is on the border between infinity and nothingness; he is something without being everything. In the opinion of Pascal, the man is both great and void. In his greatest weakness, one thinks and is therefore great, and in the highest flight of his thoughts he falls under the blows of unconscious power and is therefore negligible. One must know both sides of their nature.

Among the strongest evidence of the meaning of reason in the philosophy of Pascal's religion is his famous *pari*, a wager – for or against God. The wager must justify faith with the help of reason. If God does not exist, no matter what a man bets on, he does not win anything, but if God exists and the man bets on it, he wins everything. "If you gain, you gain all; if you lose, you lose nothing" [1]. This wager is an attempt at trying to put inspiration and mathematical reason on the scales, but only as to speak reason in favour of faith.

Blaise Pascal, "Thoughts", (1987)
 Blaise Pascal, "The Provincial Letters" (1992)

SPIRITUAL VALUES IN HUMAN EVOLUTION THROUGH PHYSICS AND TECHNOLOGY ACHIEVEMENTS

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These values are manifested as principles, standards, rules, regulations, norms of behavior, laws, orders that cause directed behavior of people towards growth, gain and progress in society.

Below we will focus at more typical examples of a strong influence of the achievement of physics and technology on people's behavior – towards progress and the emergence of new spiritual values.

The first peak of scientific achievement in physical and technical sciences was at the time of the ancient Greek scientist Archimedes (about 287–212 BC). Archimedes is the author of many inventions and discoveries, introducing the important concept of gravity centre, mathematically deduced the law of the lever, formulated the basic hydrostatic law (Archimedes' Principle of floating body), offering screws for lifting large loads, etc.). The Archimedes Principle prompted constructive behaviour – professional employment in the shipbuilding and shipping industry. This increased commodity trade, people-to-people contacts and the exchange of useful ideas, initially across the Mediterranean, and then across the world.

<u>The second peak of scientific achievement in physical and technical</u> <u>sciences</u> was reached during the time of Galileo (15th February, 1664–8th January, 1642) and Newton (14th January, 1643–31st March, 1727).

The third peak of scientific achievement in physical and technical sciences was reached at the time of Einstein (14th March, 1879–18th April, 1955) and Bohr (10th October, 1885–18th November, 1962).

Both the second and the third peak also created new professions and realized benefits for the people. The interval between the second and the first peak (between Newton and Archimedes) was about 2000 years, and between Einstein and Newton was only about 200 years (much faster!).

<u>Negative phenomena in the developing human civilization</u>. Enhanced power generation creates a danger of global warming on our planet and underperforming negative consequences for our lives. Anxieties in people also create the production of too many building (mainly plastic) materials, a variety of food packaging, clothing, household appliances and accessories. In addition, this leads to huge volumes of waste that pollute the environment – air, water and soil. We will also note that we are concerned about the so-called cosmic waste [1] .These are: all artificial objects and their fragments in space, which are already faulty, are not functioning and are a dangerous factor for us.

<u>Predominant interests of people around the world</u>. In Western societies (Europe, America), material interests are prevailing: money, cars and parking spaces for them and conflicts over environmental protection; "Become a millionaire" and "Open Sesame" - for the wealth without work, "Eat, drink and have fun" – especially important for the materialists. The result is: not a small amount of crime.

In the Eastern nations (Japan, India, China) spiritual values prevail: love for God and our ancestors, respect and love for your fellow, mutual help and goodwill, tolerance between people and ethnicity, respect for the country. The result is: low crime!

Development of theological ideas. About 3500 years ago, the Prophet Moses formulated the Ten Commandments of God – iron rules in the life of the Jewish people at that time. Then Christ did not reverse these commandments – the wisdom of Antiquity, but replaced the vengeance "An eye for an eye, a tooth for a tooth" with love not only to God but also to our fellows and to our enemy. According to Christianity, every human is our fellow. The family is a fortress of love, of mutual care and understanding, of dedication and cordiality. Treat others as one's self would wish to be treated. In our time, the Bulgarian explorer, theologian and philosopher Vaklush Tolev made the statement that "There is no evil but the good has not evolved yet". And yet, "The human being is a moving temple of knowledge" and is "God in development" [2].

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THE SPIRITUAL WAVES DOCTRINE IN THE TEACHINGS OF WISDOM

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The present work treats the Spiritual waves doctrine, first introduced by the theologian and philosopher Vaklush Tolev[1].

According to the doctrine, humanity evolves through seven Spiritual waves: the Waves of Creation, Mythology, Righteousness, Love, Wisdom, Truth and Freedom. Each of them brings concepts that serve as the basis of Teachings, which correspond to the evolutionary level of humanity.

The Spiritual waves grade man's culture and inner evolution: the Wave of Creation puts the ability to evolve and realises individualisation; the Wave of Mythology gives birth to conflict and the seeking of divinity through imagination; the Wave of Righteousness instructs though law and introduces retribution; the Wave of Love brings forgiveness and elevation to God; the Wave of Wisdom gives spiritual knowledge and raises insight; the Wave of Truth awakes revelation and manifests Divinity; the Wave of Freedom liberates the inner Divinity and realises God's Life.

The current religions and cultures of the world are manifestations of the first four Spiritual waves. For example, Hinduism, Brahmanism and Krishnaism are all children of the Wave of Mythology; Judaism, Buddhism and Islam are manifestations of the Wave of Righteousness; Christianity – of the Wave of Love. Each Spiritual wave comes according to the hierarchy of those to whom it is given. The individual Waves do not contradict each other – there is no contradiction in evolution, only progress.

Following the Teachings of Love, the Teachings of Wisdom are the natural next step in humanity's evolution. In the culture of Love Jesus Christ urged us: *Love thy enemies!*[2]; He said: *Be ye therefore perfect, even as your Father which is in heaven is perfect*[3]; and He further stressed that He, Who is a Son of Humanity is also a Son of God: *I and My Father are one!*[4].

In the Culture of Wisdom Vaklush Tolev elevated all this with the ideas expressed in his Nur Magazine: *There is no enemy, only godmate*[5], for we all carry God's Breath; *Be divine, even as your heavenly Father is divine*[6], for man is a god in evolution; as His son, *everyone can be one with God*![7]

Wisdom laid the foundations of a new planetary sociology in which *there is no evil, only non-evolved good[8]*; in which *those who know are more than those who do not err[9]*; in which *there is no suffering, only evolution![10]* The Culture of Wisdom teaches that fate is surmountable, as long as we walk our way of Golgotha and like Christ celebrate on the Cross the victory of the Spirit over matter.

Just as Love graded the *law and retribution* of Righteousness with *forgiveness and love*, so can we live Wisdom as *insight and deification*. And in Vaklush Tolev's own words: *If we realise Wisdom, we shall know the Truth*[11], which Christ spoke about: *The Truth shall make you free*[12]. For Freedom is a life in God.

Spiritual waves are a chronology of the Cosmic and human Spirit![13]

- [1] Nur Magazine 1/1993.
- [2] Matthew 5:44.
- [3] Matthew 5:48.
- [4] John 10:30.
- [5] Nur Magazine 1/2000, p. 36.
- [6] Nur Magazine 3/2002, p. 77.
- [7] Nur Magazine 1/2000, p. 79.
- [8] Motto of Nur Magazine.
- [9] Nur Magazine 3/1997, p. 4.
- [10] Nur Magazine 2/1998, p. 65.
- [11] Nur Magazine.
- [12] John 8:32.
- [13] Nur Magazine 2000.

THE TELEOLOGICAL IDEA IN THEOLOGICAL CONTEXT IN THE PHILOSOPHY OF IMMANUEL KANT

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The following article is first of all intended to observe the essential ideas of Immanuel Kant, exposed in his third important philosophical and critical investigation called Critique of Judgement. This work is the third fundamental treatise of the great German philosopher in the field of his critical transcendental philosophy, and in that book his system obtained a fairly systematic and accomplished shape. This sequel of the previous two "Critiques" has its essentially mediating and distinctive function in making Kant's thought overall coherent. With this last fundamental work of his, the systematic philosophy of Kant is, on a certain level, encircling its area completely and is, at the same time, opening itself towards all the faculties and territories of the human spirit intended for analysis. Critique of Judgement is a work that connects all of the basic ideas in Critique of Pure Reason and in Critique of Practical Reason in one inseparable whole. The Third Critique investigates the possibility for us to observe the world in respect of a certain systematic unification of goals - which way of contemplation on the world must incorporate all of the separate realities and living individuals in the ongoing philosophical discourse. The notion of a goal-oriented reasonable spirituality is an important element of what this treatise is suggesting to us.

Conclusion:

The idea of the goal-oriented unity of all things in nature anticipates the idea of the existence of one supreme creative intellect that constitutes and arranges order, harmony, their lawfulness and purpose. The reasonable unity of nature is in this regard conditioned by a single supreme and divine creative power, whose circumstance can respectively mean that we are expected to rigorously use reason as a regulative and conductive principle for the sake of all things necessary. These considerations reveal the possibility for us to construct a certain "physically prompt" theology or a theological natural ontology that can function as a teaching prelude to an ontologically higher ethics and theology that can be useful to adequately express the idea of the Divine attendance in our world in metaphysical as well as in axiological aspect.



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