

Orthodox Theology and Science (The Rev. Metropolitan of Nafpaktos and St. Vlassios Hierotheos)

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There are clear and distinct boundaries between Theology and Science. Theology, as the Greek origin of the word suggests, is concerned with God - what God is and how one can attain communion with Him - whereas Science is concerned with the created world and is interested mainly in the use of the world.

In examining this simple sentence we realize that both Theology and Science move on different levels and, consequently, there can be no conflict between them or between theologians and scientists. A conflict developed and reached historic proportions in the West, when Metaphysics was identified with Theology. It is well known that the content of Metaphysics is one thing and the content of revealed Theology quite another. For example, according to Metaphysics there is an ungenerated world of ideas from which this world is derived either by a fall or an emanation. Therefore, when the West identified Metaphysics with Theology and indeed, when the advance of natural Science resulted in the shaking off of the foundations of Metaphysics, then the Theology which had been identified with Metaphysics was also questioned. Thus, an Athonite monk once jokingly referred to the conflict between Faith and Science as the «puns and riddles» of the West.

In the Orthodox Church, as expressed by the Holy Fathers, we see that the content of Theology is one thing and that of Science another. Theology talks about God, about the Creator of the world being God, about the fall and sickness of the human personality and about its cure so that man can attain communion with God. Science concerns itself with what can be known scientifically, those things that can be examined by the senses and it tries to make man's life bearable within his fallen state.

Unfortunately, however, we often notice that a great deal of confusion prevails between these two bounds and spheres. The problem is created when Science is made sacrosanct and mythological and when Theology is secularized.

Science is made sacrosanct when various scientists use scientific data and some discoveries to demolish teaching about God or even to be identified with God, something that constitutes hubris in the ancient sense of the word. Moreover, it is also made sacrosanct when they try to find a system, which will solve all man's problems even his existential ones. Typical of such a case is the statement made recently by a geneticist who proposed the cloning of human beings: "We are going to become one with God. We are going to have almost as much knowledge and almost as much power as God ... Cloning and the reprogramming of DNA is the first serious step in becoming one with God - very simple philosophy." [1]

Theology is secularized when it rejects its essence, which is to lead man to purification, illumination and deification (theosis), when it loses its eschatological orientation, and when it is historicized and made part of society. Moreover, Theology is secularized when it is completely overwhelmed by anxiety and insecurity in the face of scientific argument or still yet when it uses the methodology of Science to talk about God. In such cases it creates problems in research. Indeed, if Theology does not have clear orthodox criteria and sure presuppositions then it has lost its mission. [2]

All that follows will show the confusion that is created, as well as the different bounds and frameworks in which both Theology and Science act respectively.

1. THE TWO KINDS OF KNOWLEDGE AND THE TWO KINDS OF TRUTH ACCORDING TO ST. GREGORY PALAMAS.

The dialogue that took place between St. Gregory Palamas and Barlaam, was also an occasion, among other things, for the boundaries of Orthodox Theology and of Science to be cleared up.

Barlaam, a representative of Medieval Scholastic Theology, professed that the truth, be it human or divine, is one and singular. He accepted that the deifying words and

the wisdom that is contained in them look to the same purpose as those of philosophy, which comes from worldly lessons, and aims at finding the truth. Thus, he argued that the truth is one, since this truth was given to the Apostles, whereas we uncover it through study. Philosophy lessons (where there is much talk about the creation of the world and the redemption of man) also participate in the lifting up of man to the level of "the immaterial archetypes of the sacred symbols permanently." [3]

St. Gregory Palamas, using many quotes from Holy Scripture and the Fathers, introduces the truth of two kinds of wisdom and of knowledge. Throughout his work we see this essential difference between divine and human knowledge underlined, something which demonstrates that the truth is not singular. Characteristically St. Gregory Palamas notes "Whence it is shown that truth is of a double kind: one is the result of God-inspired teaching, whereas the other is neither necessary nor does it save, it seeks out secular wisdom, but achieves much less." [4] That means that one kind of truth, which is the vision of God, is the work and result of God-inspired teaching, whereas the other kind of wisdom, which is worldly wisdom, is neither necessary nor does it save, but neither is it fully accomplished. Saint Gregory Palamas asks «What care does deifying wisdom have for all the truth in the stars» [5] i.e. truth and knowledge about the stars does not interest and does not benefit deifying wisdom, that is the living experience of revelatory truth.

Certainly, St. Gregory Palamas does not reject worldly wisdom which looks to the knowledge of beings but argues that this human knowledge neither constitutes nor aids in any way the attainment of divine knowledge which is the result of purification of the heart and illumination of man's nous. With clarity of thought and revelatory wisdom St. Gregory Palamas would write: «However the introduction of secular philosophy for the knowledge of beings is not entirely false, under some circumstances it could be true, but this is not the knowledge of beings and the wisdom that God gave to prophets and apostles. This is the Holy Spirit. That the Egyptians and the Chaldeans and the Hellenes are partakers of the Holy Spirit we have never heard up until today.» [6] That is to say, the use of worldly philosophy to attain to the knowledge of beings is not totally amiss. Indeed, with certain preconditions it would also be true, but this is not the wisdom and knowledge given by God to the Apostles and Prophets directly.

This difference between St. Gregory Palamas and Barlaam, in reality is the difference

between the Scholastic Theology of the West and the Orthodox Theology of the East. Amongst the many distinguishing points we can say that Western Scholastic Theology, which was expressed by Barlaam, used a single method both for created things and for the uncreated God. This means that they tried to comprehend God with the same method that they used to investigate creation and natural phenomena, i.e. through reason. Illumination by Divine Grace simply assists human reason to comprehend concepts and objects. Whereas, taking the opposite view, Orthodox Theology, as expressed by all the Holy Fathers, including St. Gregory Palamas uses a double methodology for God and creation. That is to say it uses reason to investigate creation, the nature of beings, to examine natural phenomena, while with the nous, which is purified and illuminated it attains knowledge of God. Thus, the method of the Fathers used for the knowledge of God was experience.

We can define this difference and codify it as St. Gregory Palamas did with the phrases «dialectic» and «demonstrative syllogisms.» This Saint developed the view that the dialectic method of Barlaam (and the Scholastics) refers to the search for possibilities and in general to all that concerns created reality. By contrast the demonstrative method of the hesychast Fathers, which bears a relationship to things and to experience, refers to man's journey towards deification (theosis).^[7]

All this shows that education according to the world - and this includes Science - acts at one level, whereas knowledge of God, i.e. the aim and end of Theology, acts at another. A Science which tries to comprehend God with its own methodology (reason), and a Theology which leaves behind the hesychastic method, using reason for all matters including God, are equally bankrupt. This is especially the case with Theology, when it acts within the bounds of reasoning, i.e. dialectical elaboration.

2. THE THEOLOGIAN AND THE SCIENTIST IN RELATION TO GOD AND THE WORLD.

So that we can give fuller expression to this differentiation between Theology and Science, i.e. that they act on different levels and within different bounds, let us personalize the matter, that is to say, let us look at the difference between the

theologian and the scientist. I consider all that Fr. John Romanides has said on the matter to be significant and to the point. He sets down four theological statements.

First. There is an inextricable difference between God and creatures, since there is no similarity between uncreated and created nature. He writes that the Holy Fathers, who spoke from their experience, taught that «between God and created things there is no likeness at all, even though created things were made by God and depend upon God. This means that the truth about God and the truth about the nature of the universe are not identified with one another, even though one of them is dependent on the other.» It is for this precise reason that Theology cannot be identified with Science.

Second. Both the theologian and the scientist have different kind of knowledge. «The beholder of God knows God, whereas the philosopher or the scientist investigates created things.» This means that the philosopher and the scientist, in that they investigate the world through scientific method and philosophical imagination, cannot have the same knowledge about God that the beholders of God, the Prophets, Apostles and Saints do. The theologian, however, may have knowledge about scientific matter and become a scientist through scientific knowledge but not through the vision of God. Likewise, the scientist can also attain knowledge of God, not through his Science, but through the orthodox method of knowledge of God (theognosia) which is purification, illumination and deification (theosis).

Third. The purpose and work of the theologian and those of the scientist are different. «The beholder of God knows how he will prepare people for the vision of God. The scientist knows how to teach his scientific method to his students.» The theologian may also know the way to investigate natural phenomena, but within the knowledge of Science, as the Fathers of the Church did, just as a scientist can become a beholder of God, not through his Science, but through the vision of God.

Fourth. The theologian is God-inspired regarding God, not however regarding natural phenomena. «The beholder of God is God-inspired and speaks steadfastly about God and leads straight towards God, but he is not infallible in matters concerning the applied and other Sciences, regarding which he can only know as much as his

contemporary scientists.» If someone is not a beholder of God but a «theologian» in the academic sense of the word, then he «can maintain scientific nonsense, but only of philosophers, in as much as he departs from the strict theological method of the beholders of God.» Likewise, the scientist is also a specialist and is knowledgeable of natural phenomena. When, however, he departs from his strict scientific method and confuses his findings about the nature of the world with his views about God, then he says «irresponsible things.»^[8]

I think the boundaries are clear and all that has been set down has spelt out the topic of the work and mission of both the scientist and the theologian respectively. Both are authentic when they work within their bounds, but when they depart from them and enter each other's sphere without the necessary presuppositions and rules that presuppose each framework and each area, then they become ridiculous.

In general, the theologian may become a scientist, but through Science, and the scientist may become a theologian, but through Theology. The theologian cannot play the scientist through his Theology, nor can the scientist play the theologian through his Science.

The great Fathers of the Church were theologians through the experience of revelation and they even became scientists through conscientious study and learning of human Science. That is why they are whole.

3. THE POSITION OF ST. BASIL THE GREAT REGARDING THEOLOGY AND SCIENCE

After all that has been said, I think that it would be good to refer at some length to St. Basil the Great's stance towards the Science of his time. This stance and how he faced the aspects of scientific data of his time in a theological manner can be clearly seen in his work «Homilies on the Six Days of Creation» known as the Hexameron. Indeed, in this book we can ascertain what that era's scientific views about the world

and all that exists in it were, as well as how this knowledge can be utilized by a theologian. St. Basil managed to collect all of the contemporary knowledge of Science back then on the subject of cosmology into a few speeches.

a) Firstly, we should point out that St. Basil had studied all the branches of Science of his time. From testimonies by St. Gregory the Theologian and from reports by Socrates and Sozomenos we know that he attained the best possible knowledge of Science of the time.

After receiving his general education first from his father, and then in Caesarea of Cappadocia, he went on to study under the significant pagan philosopher Libanios, most probably in Constantinople. Yet it was Athens that would be the principal city to initiate him into Science and philosophy. We are informed that four schools of philosophy operated in Athens during the fourth century, as well as many centers of rhetoric and some of medicine. There were many schools, and each school was directed by one teacher, who gathered around him a certain number of students, which did not exceed a couple of dozen or so, some of them stayed by their teachers for a longer period as associates or assistants.

In Athens, St. Basil received lessons from the teachers Himerios and Proairesios. In total he pursued all the Sciences of that era, such as rhetoric, which was considered to be the queen of Sciences, literature, history, philosophy in its four branches (namely ethics, theoretics, logic and dialectic), astronomy, geometry, arithmetic and medicine. Indeed, he knew each and every one of the Sciences so well that someone could spend his whole life studying just one of them and still not know it as well as he knew them all. All this knowledge of his clearly shows up in the commentary he makes on the Hexameron. He stayed in Athens for four or five years. ^[9]

b) In the Hexameron St. Basil continually refers to the views of the philosophers and the scientists on different cosmological subjects. Naturally, he never mentions their names but they become known through the views presented. For example in analyzing the phrase «In the beginning God created the heavens and the earth,» he refers to the views of Thales, Anaximander, Anaximenes, Pythagoras, Empedocles, Xenophanes, Heraclitus, Leucippus, Democritus and Aristotle. ^[10]

Amongst other things he writes «The wise men of the Greeks have taken much trouble to explain nature, and not one of their reasons has remained firm and unshaken, each one being overturned by its successor. It is not our job to refute them; they are adequately able to overthrow one another by themselves.»^[11] Others accepted that a thinking cause presides for the generation of all things (Anaxagoras of Clazomenae). Again others held that the foundations of the world are material elements (Anaximander, Anaximenes, Empedocles, Heraclitus). Yet again others believed that all of visible nature was made up of «atoms, and indivisible bodies, molecules and ducts,» and that the relationship between them contribute towards birth and corruption, but also in the sustenance of the world (Leucippus, Democritus and so on).^[12]

It is significant that St. Basil refers to the views of the philosophers about the creation and sustenance of the world, but that he assesses them creatively both as a theologian and as a scientist. Sometimes he accepts them, sometimes he comments on them in a theological manner and sometimes he gives his own different interpretation. Thus, the work of St. Basil does not consist of a simple juxtaposition of scientists' views, but is a creative contribution. This, of course, is a consequence of the fact that St. Basil the Great knew the different opinions of his time very well, since he had spent long years in study, but also since he had had revelatory experience.

I would like to mention two characteristic examples:

The first example is on the matter of allegory, the method by which some, like Philo the Jew, interpreted the Pentateuch. St. Basil writes: «I know the laws of allegory, though not so much from my own research, but rather from the works of others.» He means Philo and others who, as he goes on to explain, did not accept the usual meaning of the text, but said that water is not water, but some other nature, and that the plant and the fish is interpreted according to their own theory and concepts. They did the same thing regarding reptiles and wild beasts. However, St. Basil does not pursue them in such fantasies. He writes: «When I hear grass, I think of grass; and the plant, the fish, the wild beast and the domesticated animal. I accept all of them just as they are spoken.» Also, based on revealed truth he argues that, «although many have maintained much about the earth, whether it is a sphere or a cylinder, or

if it resembles a disc and is equally rounded in all parts, or if it is in the form of a cradle and is hollow in the middle,»^[13] despite this, «it will not lead me to call our own creation account of the world more dishonorable, since the servant of God Moses never spoke about shapes.»^[14]

The second example comes from the interpretation of the verse «Let the earth bring forth each living creature after its kind, cattle and creeping things, and beasts of the earth after their kind.»^[15] Some people of St. Basil's era maintained that during the rainy season the earth produces grasshoppers, countless flying insects, as well as mice and frogs. St. Basil was prepared to accept this theory, that all these come from the earth, but he gives a theological interpretation, supporting the view, (which we will see below) that all this is the result of the energy of God, which exists in creation and not the natural attributes of creation. He writes, «This command has continued and earth does not cease to serve the Creator.»^[16] Thus, it is this uncreated energy of God, which exists in creation that continually creates and produces animals and insects. Here we clearly see the creative and theological approach to the beliefs of that time.

But St. Basil does not only interpret the scientific views of his time according to theological presuppositions. He does something else which is equally important. He interprets the phrases of Holy Scripture, i.e. the experience of Revelation, via the views of Science. In analyzing the phrase «God made the firmament,» he makes broad observations, trying to give the correct interpretation. Having mentioned various verses from Scripture, at the end he says that by the expression «firmament,» with which God «divided the waters which were under the firmament from the waters which were above the firmament,» means a firm material, which is capable of retaining fluid and liquid water. He also makes further comments that we are unable to present here.^[17]

c) We must, however, look at the theological approach to the Creation of the world. St. Basil is not a theoretical secular scientist, but a great theologian. Thus, he is not satisfied with a presentation of the views of Science, but often, as seen in his works, he speaks theologically. He sets down the necessary theological presuppositions. Christian cosmology, something that differentiates Christian cosmology from any other kind of cosmology.

The first theological principle is that there is a difference between the Creator and creation, between the uncreated God and created nature. When interpreting the phrase «In the beginning God created the heavens and the earth» he makes some excellent observations.

Creation has a precise origin; i.e. it was created at a precise time and, indeed, was the result of a creative principle, God. He speaks about a «principle of good order of visible things.»^[18] Besides the world was «not created spontaneously»^[19] Thus he talks of a precise origin «so that some will not think that it is without a beginning.»^[20] The view that Creation has an exact origin leads us to the conclusion that visible things do have a cause. «Do not imagine, O man! that the visible is without a beginning.»^[21] Moreover, this infers that creation has a precise end. «If there is a beginning in time, do not doubt of the end.»^[22]

The view that the world has an origin leads us to seek out what the origin of the world is. The creative origin of the world is God Who is without beginning. «If then the world has a beginning, and if it has been created, ask who gave it this beginning, and who was the Creator.»^[23] Indeed, God the Creator of the World is «fortunate nature, abundant goodness, the beloved of all endowed with reason, the most desirable beauty, the origin of beings, the source of life, the noetic light, unapproachable wisdom...»^[24] However, for man to know God he must purify his flesh from passions.^[25]

Hence, we see here that St. Basil makes the clear distinction between uncreated and created, between that which is without beginning and that which has a beginning, between God and the world. This is very important, so that there will be no confusion between the Creator and the creation.

The second theological principle is that the world was created from nothing, i.e. not from material that did exist. That God created the world from nothing, means that he did not create it from preexisting ideas, nor from pre-existing material. This position shakes all pagan cosmological principles; that is to say, it shakes the foundations of classical Metaphysics.

St. Basil says that all skills and arts are subsequent to matter, and were introduced into life for our needs. God, however, before making the visible things «having formed in His mind (nous) and determining to bring non-beings into genesis, in the same way He conceived of the world as it ought to be.» With this aim he created matter, fire, water and air and united these dissimilar things in an indissoluble bond of fellowship in one communion and harmony. ^[26] He adheres to this point in his other talks. «Everything was brought from non-being into being at the command of God.» ^[27]

The third theological principle is that God manages the world with his uncreated energies. In other words, God did not just lay down a few natural laws and then abandon the world to its fate, but he manages it personally. This is important because it shows that the energies of God exist throughout creation, but, of course, creation can not partake of the essence of God.

The way in which God-beholding Moses presents the creation of the world, and the way in which St. Basil the Great interprets it, show the creative intervention of God through His energies. In interpreting the verse «And the Spirit of God moved upon the face of the waters,» ^[28] he says that God with His Word warmed and quickened the nature of the water, just like a bird hatches its eggs. Interpreting the Psalm «I bear up the pillars of it» (Ps. 75:3/74:4 Sept.) he says that this means the cohesive power of the earth, i.e. the power that holds the earth and, of course, that means that all is held «by the power of the Creator.» ^[29]

Not only was everything created by the uncreated energy of God but also everything is administered by the power of God. God's voice then, saying «Let the earth bring forth grass» shows that this command became a law of nature «that left to the earth the power to generate and be fruitful from then on.» ^[30] St. Basil gives such great importance to the teaching that the energy of God exists throughout creation, so that he believes that the commandment of God fills everything and even reaches to the smallest details, since even «a fish does not refute God's Law.» ^[31]

Interpreting the expression «Let the earth bring forth each living soul (Septuagint)

after its kind» he objects to the Manichaeans who believed that the soul existed throughout the earth and taught that this living soul was the divine word which constituted the nature of things made. ^[32]

The fourth theological principle set forth by St. Basil is that studying the world, creation, is not self-serving. Since, however, the world was created by God and is sustained by his uncreated energy, it is necessary for man to lift up his mind from the visible to the invisible, from creation to the Creator. In one of his homilies he says that God gave us intelligence so that «from the smallest objects of creation we may learn the great wisdom of the artisan.» ^[33] Illumination from God is sought, so that from what we see we may apprehend the invisible, and from the greatness of the beauty of creation we may attain a suitable perception of the Creator. ^[34] Thus, through creation we can gain a sense of God's grandeur. If creation is idolized, i.e. if our mind goes no further than the admiration of created things, then that constitutes making creation into God, it means idolatry.

The fifth theological principle. When St. Basil the Great studies the various phenomena that occur in nature, even the behavior of various kinds of animals, birds and insects, he leads his thoughts to spiritual teachings which aim at benefiting man spiritually. For example, looking at the cases of the hedgehog and the ant, who take the trouble to do different tasks which will be of benefit during difficult times, he says that this teaches man to provide for the future. «So that we also should not attach ourselves to this present life, but give all our attention to the age that is to come.» Therefore, living within time, we prepare for the eternal reward. With this teaching it becomes apparent that the saints do not confine their life within history, but they also extend it to eschatology or, to be precise, we should say that they let eschatology regulate history.

In general, we should note that St. Basil interprets the creation of the world mainly on the basis of the revelatory teaching of Moses and of his own tradition of interpretation, which is a fruit of his own experience. However, he also uses examples from pagan philosophers, and indeed sometimes he accepts these examples as they were formulated, sometimes giving them a different (wider) interpretation and sometimes rejecting them. This does not happen arbitrarily but on the basis of the theological principles, which we outlined above and which refer to the ontology of nature, i.e., to the One who is nature's creator, and to how he has created and

sustained the world. He uses his basic theological principles on these matters without fail. In addition, he accepts everything that is related to scientific matters, provided that it does not disturb these principles. As we saw above, he is prepared to accept certain opinions of that time, according to which the earth produces frogs and cicadas. However, he gives them a theological interpretation in saying that they are not produced by the earth acting spontaneously on its own, but by the energy of God which is in earth, since the creation. This tactic of St. Basil indicates the way which should be followed today in relation to contemporary scientific matters.

4. A CONTEMPORARY EXAMPLE FROM THE FIELD OF GENETICS.

The way in which Orthodox Theology should operate, how it should judge Science and how it should interpose its own voice, can be seen from the examination of the case of cloning. I would like to continue with a brief account, to show how a scientist and a theologian operate in this case.

It is well known that when we talk about cloning, in reality we refer to the transplantation of genetic material (DNA) from a cell to an ovary that has already had its own genetic material removed. This new material is then implanted into a third organism. It is a new discovery of scientific research that began with irrational animal and is intended to continue with rational animals endowed with souls, that is, to be introduced to human beings. It is a discovery that has terrorized many theologians, but it has also made scientists arrogant, filled with hubris, in the original Greek sense of the word.

The reaction to this new method of producing live organisms, especially of human beings, is varied. A theologian may moralize and an "atheist" may theologize. I am of the opinion that we theologians are given this opportunity to avoid moralizing and to face such cases theologically as the Holy Fathers of the Church did.

For example, I can mention that I read texts by «theologians» who in facing the

challenge of contemporary Science on the matter of genetics and especially cloning, restrict the discussion solely to the subject of normative rules that must be put to scientists when they approach such a serious matter. There is no doubt, of course, that theologians must also do that; they must make scientists aware of their responsibilities. But that can be also done by scientists who today do not necessarily come from the «domain» of the Church, yet talk of «ethical-normative» rules, which must be placed within research, so that we do not end up with the birth of monstrosities and indeed with fascist and racist mentalities.

Moreover, while there are theologians and clerics who moralize, there are also intellectuals and thinkers who theologize. One such example is the famous Italian philosopher Umberto Eco, and it appears in an article of his in the Italian periodical L' Espresso with the title: «A crazy scientist has decided to clone me.» I will cite certain opinions of this great contemporary philosopher, since they are expressive, and show how one can theologize and philosophize on this matter.

Eco writes: «A human being is not just its genes, but something much greater. Upbringing, education, social and cultural environment all play a tremendous role.» Referring to the hypothesis that some crazy scientist has decided to create his likeness he writes: «It would have my hair, my eyes, the same tendencies toward sickness, but Umberto the second will have grown up on a farm in the Mid-West. I, on the other hand, grew up in a middle-class family, in a provincial Italian city in the thirties and forties. I had a Catholic upbringing in fascist Italy, and saw television for the first time when I was twenty years old. What will Umberto the second be like me at my age? Certainly something different from me.» Having emphasized that cloning signifies a turn in Science and ethics, he points out that the human race must oppose «the diligent attempts of scientific fantasy, which is ruled by a naive materialistic determinism, according to which man's fate is determined exclusively by his genetic inheritance ... As if upbringing, the environment, the misfortunes of probability, the caresses and the slaps from parents bore no relation at all.» ^[35]

In such opinions one sees an attempt to escape from the moral and deontological canons of behavior, which certain theologians have shut themselves into, in their attempt to say something about Science's new achievement.

In continuing, I would like to present seven theological positions on the subject of the prospect of human cloning.

1. Man, according to Orthodox teaching, is a psychosomatic being and, of course, he is formed according to the image and likeness of God. He is clearly distinct from animals, because he has a soul according to essence and according to energy. This means that the human being can in no way whatsoever be considered as a «laboratory rat» nor as a breathing factory of living organs ready for transplantation for the sake, indeed, of commercial gain. In such cases the pinnacle of creation, the recapitulation of the intelligent (noetic) and sensitive world, is turned into a living accessory, a manifestation of the theory that the human being is a «tool with a soul!»

2. Man is a creature, and, thus, is defined as created, whereas God is uncreated. There is a tremendous difference between created and uncreated. It means that God creates out of non-being out of non-existent material, while man can create something out of existing material that has already been created by God. Thus, even if there are scientists who would proceed to clone humans, with frightening results, they cannot be identified with God, for the precise reason that they will be working with already existent genetic material, and they would not create something out of non-being.

3. According to the teaching of the Holy Fathers of the Church, God's life-creating energy can be found within the whole of creation, and, we could even add, in cells and in DNA too. A wealth of information regarding this truth can be found in both St. Basil the Great's Homilies on the Hexameron, as well as in the works of St. Gregory of Nyssa. Therefore, whatever happens within creation, even when man interferes in an arrogant manner, it happens with the approval or the concession of the will of God.

4. In the Orthodox Church we talk about man as a person. This means that he has uniqueness, freedom and love. The term person refers to man being according to God's likeness and image, and of course, is extended to the whole being. With cloning it is possible to form externally similar people, who will have the same kinds of reaction on certain points, something we can see in sibling twins. Yet we are unable

to abolish the person - the hypostatic other-ness of a particular human being - with his own special mode of love and freedom. Each human being has a distinctive hypostatic mark, a variety of degrees of love, even up to self-sacrifice, as well as the ability to express itself in freedom positively or negatively.

5. Genetic Science, and of course, human cloning cannot free man from the mortality with which he is born. Science may cure certain hereditary diseases and can extend life, but it cannot help man overcome death. Man's basic problem, however, is not the extension of biological life, nor is it the delaying of death, but it is overcoming death. That is the work of Orthodox Theology.

6. These contemporary challenges give us the opportunity to determine exactly what life is and exactly what death is. It is a fact that man is greatly troubled by this existential question. However many similarities may exist, bodily, psychologically and so on, however many transplants take place, man will still feel the unconquerable need to answer these questions. Scientists cannot give exact answers. And even if they try to do so, even then their answers will be incomplete. Man asks, «Why was I born? Why did they give birth to me without asking?» This problem will become even greater when he gets informed that he was created by cloning and without the loving care of a mother and father. In addition man is concerned with the question of what is the point of his existence, why does he exist. The greatest question is found within the framework of death. Many young people ask, «Why should death exist? Why do my loved ones die? Where do they go after death? Why should we come into life and then after a short while disappear, if there is no life after death? And if life does exist after death, then why should I die and where do I go to?» Orthodox Theology answers these questions whereas Science cannot give any answers.

7. Even if a human being were to be cloned, it will still be created, and would be endowed with a precise origin, corruptibility and freedom, which will not necessarily function positively as happens with uncreated nature, but will also function negatively, and it will have a biological end. It could of course, as something created, also have an end to its very existence, but that does not happen because God wants it to be immortal by grace. Within the Church however, we talk about another form of «cloning» which Science cannot give to man. With the incarnation of Christ, that which was created was united with that which was uncreated. Thus, each human being has been given the possibility of acquiring experience of the union by Grace of

the created nature with the uncreated energy of God in Christ Jesus. The Saints acquired this experience, thus becoming uncreated and immortal by Grace. The Uncreated and Immortal was «transplanted» into them, and they gained experience of immortal life even from this biological life. The problem, then, is not bodily or genetic transplantation, but the «transplantation» of God within our hypostasis/person. It is such experience that gives meaning to man's life. Therefore, contemporary Science, and indeed genetics, gives us the opportunity to concern ourselves with the eternal questions which have concerned the human spirit, from ancient Greek philosophy until today; questions which were answered by the incarnation of Christ. We must look at anthropological problems through Theology, Divine Economy, Soteriology and Eschatology. It is an opportunity for us to guide man's search for the deeper and higher things of life.

The subject of the Orthodox Theology's encounter with Science is large enough and cannot be answered within the time limits of a lecture. Here we simply presented some problems. The fact remains that we must definitely set the boundaries between Science and Orthodox Theology. The scientists should not approach theological and existential questions using scientific methodology, because they will bring tremendous disappointment to man who is searching for something different. Neither should theologians approach scientific reality, leaving behind the higher things of spiritual life. It is impossible for the theological and existential message to be secularized and brought into society. Science answers the question of what the world we see is. Theology answers the question of who the Creator of the world is. Science researches the subject of the behavior and function of created things.

Theology sees the energy of God that -----(missing word page 146) the world. Science tries to heal the sicknesses that make man suffer. Theology helps man transcend his creatureliness and mortality. Science answers the question of how beings and created things were made and created. Theology answers the question of what is the aim and end of creation. Anyway, in the Orthodox Church we look for «new heavens and a new earth» (II Peter 3:13). Let Science occupy itself with the aged earth and the aged heaven. We, as theologians and clerics, look for that «blessed hope, and the glorious appearing of our great God and Savior Jesus Christ» (Titus 2:13).

NOTES

[**1**] BBC News - Wednesday January 7th, 1998 -reported in Greek in the «Eleutherotypia» Newspaper January 8th, 1998. [**2**] See the Greek Magazine Diabasi (=Passage), Nov.-Dec. 1997, pp. 5-7. [**3**] Translated from the original Greek text published in Gregory Palamas: Works Vol. 2, in the series Ellenes Pateres tes Ekklesias, Thessaloniki 1987, p. 268. [**4**] *ibid.* p. 270. [**5**] *ibid.* p. 272. [**6**] *ibid.* [**7**] See Nikos Matsoukas: «The double methodology of Gregory Palamas,» in Greek, in the volume Papers of the Theological Conference in honor and memory of our Father among the Saints Gregory Palamas, Archbishop of Thessaloniki, published by the Sacred Metropolis of Thessaloniki 1986, pp. 75 onwards. [in Greek] [**8**] John Romanides: Romiosyni, Published by Poumaras, Thessaloniki 1975, pp. [in Greek] [**9**] See Panagiotis Christou, O Megas Basileios, Patriarchal Institute for Patristic Studies, Thessaloniki 1978, pp. 22-23. [**10**] Translated from the original Greek text of Basil the Great, Homilies on the Hexameron, published in the series Ellenes Pateres tes Ekklesias, Vol. 4, p. 28, footnote 1. [**11**] *Ibid.* [**12**] *Ibid.* [**13**] *Ibid.* pp. 338-340. [**14**] *Ibid.* p. 240. [**15**] *Ibid.* [**16**] *Ibid.* p. 344. [**17**] *Ibid.* pp. 112 ff. [**18**] *Ibid.* p. 24. [**19**] *Ibid.* [**20**] *Ibid.* p. 30. [**21**] *Ibid.* p. 32. [**22**] *Ibid.* p. 34. [**23**] *Ibid.* p. 30. [**24**] *Ibid.* p. 32. [**25**] *S o o n* [**26**] *S o o n* [**27**] *S o o n* [**28**] *S o o n* [**29**] *S o o n* [**30**] *S o o n* [**31**] *S o o n* [**32**] *S o o n* [**33**] *S o o n* [**34**] *S o o n* [**35**] *S o o n*

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