

# **Orthodox Bioethics in the Encounter Between Science and Religion**

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*In Science and the Eastern Orthodox Church;  
ed. By D. Buxhoeveden and G. Woloschak*

### **1. *The encounter in context***

From a time well before the Enlightenment the “encounter” between science and religion has been essentially one of confrontation. A case in point is that of Nicholas Copernicus. Toward the middle of the sixteenth century Copernicus replaced the universally accepted geo-centrism of Ptolemy with his version of helio-centrism, a theory verified in the seventeenth century by Galileo Galilei. Copernicus only dared publish his findings a few days before his death, because he feared he would be condemned by ecclesiastical authorities. The Catholic Church formally rejected the Copernican system in 1616. Finally, forced by the Inquisition in 1632 to abandon Copernicus’ theories, Galileo was himself condemned and sentenced to house arrest until his death a decade later.<sup>1</sup> This is a classic example of the tension that has persisted between the inquiries of science and the dogmas of religion. It points out a regrettable fact: that it is often theology – or rather the Church’s theologians – who prove to be in error in this debate. The reason, for the most part, is because these theologians have misconstrued the Holy Scriptures, reading them in a strictly literalistic way rather than “symbolically,” as did the Fathers of the Church.

“Literalism,” which is often the product of a fundamentalist approach to Christianity, tends to take each biblical image or narrative at face value and fails to appreciate the fact that biblical language is often poetic, symbolic, even mythical. This is necessarily the case, since the ultimate referent of biblical language is located above and beyond the world of empirical reality. It is not susceptible to scientific analysis and can be approached only subjectively, primarily through the experience of prayer.

To say that the language used by authors of the Bible is mythical or symbolic, however, does not mean that it is not true. Properly understood, a “myth,” like some of the finest poetry, expresses in human language something transcendent and ineffable: realities that ordinary human language is unable to express. A myth, in the classic sense, serves to render those transcendent realities intelligible. It speaks of the relation between heaven and earth, between the gods, or God, and the world of human life and experience. Similarly, a symbolic reading of Scripture (allegorical or typological) leads beyond the purely literal (“historical”) meaning of a given text, to focus on its ultimate, transcendent meaning, termed in patristic tradition the “spiritual sense” of a passage, its *sensus plenior*. The movement from a literal to a spiritual reading is essential, if the reader is to grasp the deeper, fuller meaning of the passage in question, described in biblical hermeneutics as “the meaning God seeks through the biblical text to convey to the world today.” Like the language of Scripture, theological language aims to be *theoprepeis*, “worthy of God.” It is a unique language, one which unites heaven and earth, the immanent and the transcendent, by means of the Word. In a Christian

perspective, that Word, expressed by human words, is in the first instance the divine Logos, the eternal Word or Son of God the Father (John 1:1,18). The ultimate content of that Word and its primary meaning thus reside outside the domain of empirical investigation and verification.

Science, which deals with observable phenomena and verifiable propositions, is not equipped to pass judgment on theological affirmations, just as theology is not able to judge the findings of science. The two have different aims and methods. Their respective quests are undertaken in different spheres of reality. The one seeks knowledge of the physical world through observation and experimentation, while the other seeks knowledge of God and of his presence and activity within and beyond the material universe. Although they differ in both method and language, they can nevertheless complement each other insofar as they bring together insights and convey truths concerning the real world of human life and experience. In the realm of bioethics particularly, science provides basic facts about the world, while theology seeks to interpret those facts, to discern their significance for human conduct (ethics) and human destiny (eschatology). Science without theology is reduced to “scientism,” a purely materialistic view of the world. Theology without science, on the other hand, produces pious fantasizing or mere wishful thinking about the origin, end and ultimate meaning of the world and human lives (consider the ongoing debate between “creationists” and “evolutionists”). Working together, the two approaches, scientific and theological, can achieve a consistent worldview that expresses reality in terms of both its empirically verifiable “facticity” and its ultimate meaning (respectively, the “what” and the “why” of things).

This suggests that the debate between science and religion needs to be entirely rethought. The two disciplines need to be conceived in such a way as to overcome the opposition so often mounted between them, in order to grant to each “language,” scientific and theological, its proper place in the mutual quest for truth. In an authentically Christian perspective, there is no opposition between science and religion. This is because all true knowledge, like all true wisdom, is bestowed by God who is the Truth (John 14:6). The field of bioethics requires a deep and broad knowledge of science, particularly in the realm of medicine. In order for science to serve its true purpose, however, rendering service to God and to human persons, its findings need to be correctly interpreted by theological reflection grounded in the perspective of Scripture and ecclesial Tradition.

This point came home to me with special force a few years ago in a discussion on the beginning of human life and the status of the pre-implantation embryo. I was speaking with an Orthodox specialist in embryology, who teaches at one of the country’s most illustrious universities. She reminded me that questions about the “beginning” and “status” of the embryo fall outside the purview of the biological sciences. While she could speak to the most complex issues concerning conception, mitosis, the significance of demethylation, stem cell research, and so forth, she very rightly insisted that questions concerning the point at which individuated human existence begins, and the value and meaning of embryonic life, are essentially theological. Yet theology can speak to these questions only insofar as it has accurate and detailed scientific information on which to base its judgments. Science, for example, can tell us whether the zygote is genetically unique and “programmed” to develop into a human being (rather than, e.g., a hydatidiform mole). It falls to theology to determine whether the

pre-implantation embryo is ontologically a “pre-embryo,” a “person,” or something in between.

Stated in other terms, science is basically objective and analytical. It focuses its attention on the physical world rather than on metaphysical or spiritual reality. Science provides us with empirical information, without interpretation as to its final meaning or even its proper use. It is the task of philosophy and theology to interpret that information so as to provide a foundation for its appropriate application. Theology plays a unique role in this process, in that it considers the relationship that exists between immanence and transcendence. It deals with metaphysical questions that arise from its elaboration of a profound reflection on the human person, the personal and spiritual aspect of human life, created in the image of God.

Science and theology thus constitute complementary approaches to the same reality: the human being and the created world. To schematize: science provides the “givens,” the bare facts, to which theology can and should provide the meaning. There is an analogy to this relationship in the domain of biblical studies. A scientific approach to the biblical documents (text criticism) and to their origin and development (historical-critical research that asks questions about the author’s “intention,” about cultural influences and historical conditions that helped shape the text, etc.) provides us with a great deal of useful information about the canonical writings. The ultimate sense or meaning of those writings, however, particularly as it concerns their significance in the lives of believers today, can only be discerned by a different order of reflection, one that relies both on ecclesial tradition (beginning with Scripture as its normative expression) and on spiritual experience. It is this immediate experience of God – provided by liturgical and personal prayer as well as by acts of charity – that inspires the theological reflection that provides value judgments concerning the givens of science.

If science is to have any ultimate significance for the lives and destinies of human persons, it needs to offer its findings to the Spirit-inspired intuitions of traditional Christian theology. It needs to submit the fruits of its inquiries and experiments to a specific hermeneutic, a structure of interpretation. For Orthodox Christians, such a hermeneutic flows out of ecclesial tradition. It is given its specific shape by the *theoria* or “inspired vision” of the holy Fathers, particularly those of the Christian East (Greek and Syriac).

## ***2. Orthodox Bioethics: a scientific and theological discipline***

The discipline of bioethics illustrates perhaps better than any other the interdependence between science and religion. Bioethics concentrates on the *bios*, biological life, especially at the beginning and the end of human existence. Its judgments are influenced directly by the results of contemporary scientific and medical research in areas such as physiology, reproductive technologies, embryology, genetic engineering, immunology (infectious diseases), pain management, and palliative care. Most bioethical reflection today is profane or secular, and its aims are largely utilitarian. A Christian bioethics, on the other hand, bases its insights and judgments both on science and on ecclesial tradition. Its very foundation is theological. It strives in specific concrete situations to discern the will and purpose of God, in order to propose to

researchers and medical teams protocols that correspond to the divine will, for the spiritual as well as the physical well-being of the persons in question.

As to the beginning of life, bioethics raises questions concerning animation or “ensoulment”: is it “immediate,” occurring at fertilization and creation of the zygote? Or is it “mediate” or “deferred,” achieved only at a later stage (e.g., at implantation, at “quickening,” at birth, or even later)? The discipline considers as well the moral acceptability of various forms of medically assisted procreation (e.g., AIH or AID: homologous or heterologous insemination, using respectively the sperm of the husband or of an anonymous donor), including in vitro fertilization (IVF), where the embryo is created in a petri dish, then transferred to the mother’s uterus. It evaluates procedures such as intracytoplasmic sperm injection (ICSI), in which the head of a selected spermatozoon is injected directly into the cytoplasm of a harvested ovum (a procedure intended to do away with “extra embryos” that must be frozen for future use, discarded, or used for scientific research and the making of commercial products such as cosmetics). Generally speaking, bioethics seeks to formulate ethical judgments about all manipulations of human embryos, particularly the harvesting of embryonic stem cells (which destroys the embryo), and genetic engineering that would modify the DNA for various purposes, to produce children free of specific genetic diseases or deformities, for example, or to create “designer babies” who possess enhanced capacities of strength, intelligence, and the like (an aim that, fortunately, has not yet been realized).

Bioethics that focuses on the beginning of human life also considers matters such as abortion (the moral weight of terminating a pregnancy, whether for “convenience” or on therapeutic grounds). It evaluates as well procedures such as pre-implantation diagnosis (PID), together with the risks they entail. Finally, it raises the issue of the welcome to be extended to handicapped newborns: whether their reduced quality of life justifies euthanasia (putting them to death or simply allowing them to die), or whether they should be medically and emotionally sustained and provided legal protection. This is an especially sensitive issue in our time, given current pressures to abort or otherwise dispose of children afflicted with Trisomy 21 (Down syndrome).

These are just some of the issues considered by specialists in bioethics regarding the beginning of human life. Equally pressing and important are ethical challenges surrounding the end of life. How, for example, are we to define “terminal illness” and determine the final stage of biological existence? How indeed are we to define “death”? Does death occur with the irreversible cessation of cardio-respiratory function, or should the criterion be “brain death”? And if the latter, does “death” entail “death of the whole brain,” including the stem? Or can we accept “death of the brain as a whole,” where the cortex and cerebral hemispheres no longer function but the brain stem continues to maintain body temperature, blood pressure and breathing, even though all capacity for thought, personal relationships and basic sensation is irretrievably lost? This is a question of immense importance, vital to the issue of organ harvesting.

Bioethics will also reflect on the matter of suicide, whether “rational” (voluntary) or as an act “beyond one’s control,” as well as on the thorny issue of “physician-assisted suicide,” in which caregivers provide patients with lethal medication that they then take to end their own life. Euthanasia, where the medical team directly intervenes to end

the life of a comatose or otherwise incompetent patient, is a major bioethical issue today, given its (qualified) acceptance in the Netherlands, Belgium and Switzerland, together with pressures for its legalization in the United States and other Western European countries.

One of the most important tasks of bioethics is to determine appropriate ways and means to accompany dying patients. Is it ethically mandatory to undertake “medical heroics,” to sustain biological existence as long as possible, irrespective of the quality of the patient’s life? Or does that reflect a philosophy of “vitalism,” presupposing (against a biblical perspective) that physical death is the absolute end of human existence, and therefore everything possible should be done to delay that end as much as possible? Passing value judgments on terminal care leads bioethicists to consider as well the appropriateness of prophylactic antibiotics in cases of pneumonia, the effectiveness and risks of cardio-pulmonary resuscitation (CPR), benefits and complications associated with providing nutrition and hydration to the terminally ill, and the use and potential abuse of “palliative sedation.” Finally, bioethics will consider the treatment of the deceased, contemporary funeral practices, and whether a moral choice needs to be made between burial and cremation. Occasionally those concerned with bioethics will focus on a crucial pastoral issue: appropriate accompaniment of family and friends who suffer grief over the loss of a loved one.

For many years now I have included in my courses on bioethics issues that one almost never finds discussed in manuals on the subject. These arise in various stages along life’s way, between infancy and old age. Of particular importance are the dynamics of “family systems,” with their problems of addiction and dysfunction, together with the various roles played by members of the system in an attempt to maintain “homeostasis” within the family, that is, an atmosphere of stability and relative harmony in a basically sick environment (a home, for example, with at least one alcoholic, or a parish with a dysfunctional priest or parish council; family systems dynamics characterize far more social units than just nuclear families).

This overview obliges us to raise an important question: is there in fact a specifically “Orthodox bioethics”? A number of Orthodox Christians today will argue that there is not. They see the field as basically secular, a profane science that is all too often at odds with Christian moral reflection rooted in Scripture and patristic tradition. They find support for their view in the sheer relativism that seems to dominate the field, the observable fact that most bioethicists derive the principles they apply from utilitarian philosophy rather than from “hearing the Word of God.” They point to the many specialists in the field who support activities such as embryonic stem cell harvesting and research, abortion on demand, and physician-assisted suicide. If these procedures reflect the values of the majority of bioethicists today, can Orthodox reflection on various life issues be associated with this utilitarian perspective in such a way as to allow that an Orthodox bioethics does in fact exist?

In reply, I can only express my opinion that such a discipline does and must exist. Insofar as it is a science in its own right, remaining descriptive rather than prescriptive, bioethics is neutral. Everything depends on the presuppositions that underlie it and shape its judgments and their concrete application. We may share no common language with many of those who take a secular approach to the issues in question.<sup>2</sup> Nevertheless, bioethical reflection can be profoundly “orthodox,” to the

degree that it assumes a properly theological vision of God, the world and the human person.

### 3. *Is Bioethics descriptive or prescriptive?*

Bioethics from an Orthodox Christian perspective is *theonomous* rather than autonomous. It finds its source and finality in the power and authority of God. This said, science itself is and must remain objective, free from specifically religious influence. It should be free from the imposition of ecclesial dogma that would risk hampering scientific research, whose purpose is to provide us with *facts*: aspects of empirical reality that provide the raw material upon which we make moral judgments. The most difficult challenge in this regard for the Christian bioethicist is to maintain a proper balance between scientific objectivity and the most basic convictions of the faith regarding the presence and purpose of God in creation and in human life.

This challenge is especially acute today in the United States. As in 1925, with the famous trial of John Scopes, a significant number of conservative Americans are dead set against the teaching in our secondary schools of Charles Darwin's theory of evolution, including that of the so-called "neo-Darwinists." Others want merely that the theory of evolution be paired in courses on natural science with the teaching of "creationism." In its most common form, creationism affirms the biblical image of God as Author of all that exists, yet it insists that his creative work was accomplished in the relatively brief span of several millennia. This notion throws into question the Darwinian evolutionary hypothesis, according to which animal and vegetable species developed according to the laws of natural selection over a period of millions of years.

This goes together with the biblical literalism we spoke of earlier. Many conservative or evangelical Protestants, joined by a significant number of Catholics and Orthodox, have raised loud objections against any theological perspective that would question a fundamentalist (literalist) reading of the Bible. They hold typically to the "six days of creation," which they believe occurred some six thousand years ago; to a worldwide flood at the time of Noah; to the exodus from Egypt through the Red Sea, between two immense walls of water; and to the Second Coming of Christ as his visible descent from heaven on a bank of clouds. Today fundamentalist Christians attempt increasingly to base their approach on the physical sciences. Many of them have adopted, and deformed, the theory of Intelligent Design. This holds that the world is so complex that it could have been created only by a Supreme Being, an intelligent Power or Force. In many organisms, its proponents maintain, there exists an "irreducible complexity" that could not possibly have arisen by random mutations occurring during the course of evolutionary history. Examples include the unicellular paramecium, with its cilia, mobile filaments that enables it to move in quest of food and in self-defense. Or the eye, with its multiple interacting parts; or the system of blood coagulation. Eliminate a single constituent element of these complex systems and they no longer function at all. An often evoked example from the inorganic world is the common mousetrap. This normally consists of a platform, a spring, a bar, a catch, and a piece of bait. Remove one of these five elements, and it no longer works. To defenders of Intelligent Design, this is an example of irreducible complexity. It is impossible, they hold, that the mousetrap could have developed gradually, from a simpler, more primitive mechanism. It is the same, they argue, with organic systems. Natural selection through random mutations, according to Darwin's model, is simply inadequate to explain the

development of living organisms. We should therefore conclude that they came into being through the purpose and activity of an intelligent Creator.

The problem with this approach is that Intelligent Design is treated as scientific theory that accordingly should be introduced into the natural sciences curricula of our public schools.<sup>3</sup> Beside the fact that it lies outside the domain of experimental proof (and in many of its forms is basically a “God of the gaps” theory), in the hands of many people it is nothing more than a veiled attempt to have creationism taught as science. This leads to a regrettable confusion between science and religion. Creationism in all its forms is the product of theological, not scientific, reflection. Every believing Christian, Jew or Muslim is a “creationist” and a proponent of Intelligent Design, in the sense that he or she believes that God is the author of all that exists, including human life. To force the image of God into a scientific mold, however, although not incorrect in itself (God is the author of all that science studies, as well as of all scientific knowledge), inevitably compromises the essential objectivity of scientific research by confusing the objective givens of that research with their interpretation, which remains the purview of philosophers and theologians.

What does this mean for the discipline of bioethics? Is it a science, in the sense that ethics in general analyses and passes judgment on human behavior?<sup>4</sup> To reply, we need to make a distinction between ethics and moral theology. Ethics is essentially descriptive, whereas moral theology is prescriptive. The task that falls to ethicists is to describe and analyze aspects of human life and behavior, whereas moral theologians press that analysis further, in order to provide guidelines for good, just and appropriate human behavior, and to propose remedies that can heal our illnesses, both physical and spiritual.

As it is conceived and practiced in today’s secular world, bioethics likewise begins as a descriptive science. Basing itself on the results of medical research especially (embryology, gerontology, etc.), it analyzes the human condition, taking stock of the genetic, neurological, environmental and other influences that condition human conduct.

Nevertheless, a certain confusion between ethics and moral theology leads many of those who identify themselves as bioethicists to make what are essentially prescriptive judgments. And those judgments are influenced as often by politics (or political correctness) or by personal experience as they are by the actual results of scientific research. This is why there exists such a broad spectrum of responses regarding troublesome bioethical issues that arise in the framework of our social life. Is abortion morally acceptable? Is the death penalty? Should food and hydration be provided to persons who are terminally ill, that is, with a prognosis of mere hours or days to live? Is homosexuality a matter of free choice, or does it originate with genetic or environmental factors, or both? Whatever questions of this kind we may raise, they elicit a multitude of often contradictory replies, each of which represents a different bioethical viewpoint. No clear and satisfactory answers are provided, because those responses derive from no absolute convictions, values or truths. The much scorned word “heresy” still applies today, and nowhere more emphatically than to “relativism.” And nowhere, it seems, is relativism more easily and frequently substituted for the notion of absolute truth than in the realm of bioethics.

If there is indeed an “Orthodox bioethics,” it must be one based on what we referred to earlier as a system of interpretation. This entails a hermeneutic approach to interactions between God, human persons and the natural world that will allow us to evaluate the results of scientific inquiry and draw conclusions, based on those results, that can guide and shape Christian moral life. Orthodoxy in fact offers us just such a hermeneutic, derived from Holy Scripture and Holy Tradition. Considering the former to be absolutely normative, these two most basic repositories of the faith provide us with presuppositions and criteria essential for resolving various “bioethical issues.” Neither the Bible nor ecclesial tradition provides practical answers to specific bioethical questions that arise in our homes, hospitals and society in general. The single exception is that of abortion, which was condemned in the early periods of Israel’s history (see, for example, Exodus 21:22-24), and has been throughout the history of the Church (e.g., Didachê 2:2; canons 2 and 8 of St Basil; canons 63 and 68 of the Spanish Council of Elvira). In general, “bioethical issues” are contemporary matters resulting from the rapid development of bio-medical technology since the late 1950s (ventilators, dialysis, genetic engineering, stem cell therapies...). Although Church Tradition (which includes Scripture as its “canon” or norm) does not address these issues directly, it does provide us with a conceptual framework that enables us to determine and apply to specific situations what we call the *phronema ekklesias*, the “mind of the Church.” While there is no single and definitive answer given to many of the problems treated by bioethics – there is no official Magisterium within Orthodoxy to provide fixed answers, as there is within the Roman Catholic Church – Orthodox theologians across the globe are generally of one mind in their approach to these issues. That approach is informed and guided by the basic conviction that from conception to the grave and beyond, every human life is sacred, of infinite value in the eyes of God, and thus worthy of boundless compassion.

Orthodox bioethics is therefore prescriptive as well as descriptive, insofar as its ultimate purpose is to indicate what the great 19th century Alaskan missionary, Metropolitan Innokenty Veniaminov called “the Way into the Kingdom of Heaven.” Although it takes fully into consideration the findings of science, its most basic aim is to analyze human behavior and to propose solutions to moral questions that can inform and guide believers in the way toward eternal life. This includes considering the effects of sin in human experience and relationships, and proposing remedies that can lead to the healing of soul and body. Bioethics in an Orthodox perspective thus exercises a fundamental *pastoral* role, insofar as it analyzes our condition of spiritual as well as physical illness, and seeks to liberate us from various forms of dysfunctional and destructive behavior, towards ourselves and towards one another.

Bioethics, then, is essentially *therapeutic*. It strives to provide us with an accurate and objective analysis of the human condition, from conception to death. But that analysis is complemented by a proper interpretation (in conformity with Scripture and Tradition) of the results of scientific inquiry, an interpretation that seeks to lead us in the way – through repentance as well as through medical care – that leads from spiritual illness to definitive healing. In patristic language, this progress involves the faithful in a quest for *theosis* or “deification,” meaning participation by grace in the very life of God.

#### 4. *The principles of Orthodox Bioethics*



What are the principles or presuppositions that underlie a specifically “orthodox” bioethics? What *Weltanschauung* or vision of life and the world does Orthodox Christianity propose in order to maintain a proper balance between the findings of scientific research and theological reflection?

In bioethics manuals the “principles” of bioethics are usually presented under four rubrics that pertain especially to the domain of medicine. (1) The principle of *autonomy* over paternalism (“paternalism” refers to the right or power to exercise control or domination over another person, under the pretext of promoting his or her well-being; today the medical world tends to stress the importance of patient autonomy: the right of the patient, for example, to choose freely whether or not to accept particular therapies and other forms of medical intervention). (2) The principle of *non-maleficance* (the first maxim of the Hippocratic Oath: *primum non nocere* – above all, do no harm – implies the moral obligation to avoid harm or injury to the patient to the extent possible). (3) The principle of *beneficence*, which stresses our moral obligations toward others, to serve them toward realization of their own interests. And (4), the principle of *justice*, which strives to attain an equitable distribution of available resources, together with proper distribution of benefits and responsibilities in a given community of persons (the family, the society).

A fifth principle is usually added to these four. This is the obligation to acquire from the patient *informed consent*, based on his or her adequate understanding of the potential benefits and risks involved in the treatment proposed by the medical team. Informed consent can signify as well the patient’s free choice to transfer certain rights and obligations to another person. The ill or dying patient may, for example, give consent to another agent (a family member or an ombudsman) who will make decisions in his or her stead in case the patient becomes incompetent.

Decisions made in the domain of medical therapy – as in every area of moral decision-making – do not always represent a choice between good and evil. In most cases, we are dealing with ambiguities that oblige us to choose among several options, with the aim of arriving at the most advantageous or the “least bad” choice. Rather than black or white, most ethical issues occur in a gray area, where *discernment*, based on the best available information, is primary. This raises the matter of *obligatory evil*, choices that unavoidably lead to harm. Often we are obliged to accept, for example, a medical treatment that brings about undesirable but inevitable consequences (as with pain and distress associated with chemotherapy, or loss suffered from amputation of a gangrenous member). In order to make decisions that conform to the principle of non-maleficance when we are confronted with cases of obligatory evil, we can have recourse to the *principle of double effect*. This is a principle elaborated especially by Roman Catholic theologians, to justify or render licit those actions that carry the risk of harmful consequences. It usually requires the following conditions. (1) The action that produces the malefic consequence cannot be evil or unjust in itself, by its very nature. (2) The potential evil cannot be the means to produce the good that one seeks (“the ends do not justify the means”). (3) The harmful or evil effect must not be desired or consciously sought, but merely tolerated. And (4), the action should be proportionate to the desired end (this involves us in reflection on the relation between benefits and risks, the good and evil consequences of a particular action).

It should be said, however, that this kind of rational analysis that takes into consideration the principle of double effect is typically “western” and somewhat foreign to an Orthodox (Eastern Christian) perspective. Although application of the principle can be very useful in certain cases, it runs the risk of focusing on facts and actions to the point that it loses sight of the person. However helpful appeal to any of these principles might be, they should never be allowed to take precedence over the well-being of the patient. It would be morally wrong, for example, to withhold a (necessary yet burdensome) ventilator from a young person with a collapsed lung, just as it would be wrong to apply CPR to a dying octogenarian, all in the name of non-maleficence.

The five principles noted above, together with that of double effect, are more or less universally accepted, although their interpretation and application can vary from case to case. An Orthodox bioethics, however, while accepting these principles as guidelines for patient treatment, is grounded as well in other principles or presuppositions that represent a particular theological and spiritual vision or perspective. It is these that make of bioethics in an Orthodox mold an essentially *theological* discipline.

That perspective bases all ethical, and particularly bioethical, reflection on a certain conception of God, which can be summarized as follows. God is the sovereign Master of the macro cosmos and the micro cosmos, the Source and ultimate End of human life and of all creation. He is the unique and all-powerful Creator, in whom all things have their origin and who provides all things with meaning. Yet this same God is also the Redeemer, who, as the eternal divine Son, humbled himself by the ineffable *kenosis* of his incarnation (John 1:14; Philippians 2:5-8), in order to assume fallen human nature and to glorify that nature with the glory that he shared with the Father “before the foundation of the world” (John 17:5). According to patristic thought, “God became man, in order that man might become ‘god’ by grace,” that is, so that human persons might share in the life, the very existence of God, through the transforming action of the divine energies, the life-giving attributes of God such as holiness, justice, beauty and love. In this necessarily Trinitarian perspective, the divine Person, who submitted himself to suffering and death for the world’s salvation, is the “God-man,” whose self-sacrifice bears witness to a love that knows no bounds.

As a corollary to this image of God, Orthodoxy has elaborated an anthropology (its doctrine of the human person) that is as elevated as its theology (its conception of divine life *ad intra*). This corollary affirms the sacred character of human life, a quality that originates with the nature or essence of human persons created in the divine image (Genesis 1:26-27). It affirms as well that every human being is called to journey toward the “likeness of God,” a vocation rooted in the hypostasis or personal quality of human life. Created in the divine image, every human being is “sacred” by nature, invested with an indelible quality of holiness by the fact that he or she bears that image – however obscured or tarnished it may be – beyond death and into eternity. Sin – all that represents a “scandal” or obstacle in spiritual life – is what hinders human persons in their journey toward eternal communion with the Holy Trinity. Whereas the divine “image” is inherent in the life of every human being and can never be totally effaced, movement toward the “likeness” of God is often hampered and even thwarted by sin. The sacred character of human existence, then, is provided by nature, whereas the gradual process that leads to holiness or sanctification is acquired only by a certain

*askesis*, an ascetic struggle, which can transform a simple individual into a *person*, a “being in communion” with God and neighbor.

It is this complementary vision of God and human persons that explains the apostle Paul’s striking affirmation in 1 Corinthians 6: “You are not your own; you have been bought with a price [the suffering death of Christ]; therefore glorify God in your body!” With regard to bioethics, this means that our entire life, from conception to death and beyond, literally belongs to God, who alone has the authority to determine the beginning and end of our earthly existence. This is what explains Orthodoxy’s firm opposition to abortion, suicide and euthanasia.

It is likewise this vision of God and the human person that makes Orthodox bioethics fundamentally different from all forms of profane or secular moral teaching. Neither purely descriptive nor purely prescriptive, it combines the two approaches in a reflection that is both scientific and theological. As it seeks constantly to maintain a just equilibrium between science and religion, Orthodox bioethics has as its chief end to indicate the pathway that leads through the vicissitudes and temptations, the sufferings and joys of daily life, and into eternal participation in the life and glory of the Risen Christ.

What is the place of an Orthodox bioethics and its task in the encounter between science and religion? It is above all to unite in itself the two disciplines of scientific (and especially medical) research and the Church’s theological reflection, in order to offer us a unique and accurate vision of God and the human person. Grounding itself in the givens of scientific investigation, the field of bioethics should have as its primary task to formulate judgments regarding our way of utilizing those fruits and applying them, in conformity with the will of God, toward therapeutic ends. The Church, as so often stressed in Orthodox literature, is a *hospital*, a locus of healing and grace. Insofar as it maintains the proper balance between the findings of science and theological reflection concerning the just and appropriate application of those findings, the Church can accomplish its most important bioethical mission: to place ourselves and one another into the loving hands of Christ, the true Physician of our bodies, minds and souls.

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1. For an interesting and significant reassessment of the relation between Galileo and the magisterium, see Wade Rowland, *Galileo’s Mistake. A New Look at the Epic Confrontation between Galileo and the Church* (New York: Arcade Publishing), 2001.
2. H. Tristram Engelhardt has made this point eloquently in the first chapter of his book, *The Foundations of Christian Bioethics* (Swets & Zeitlinger), 2000.
3. Scientific method requires that a theory be falsifiable. Referring to the explanation of K. Popper, cosmologist Lee Smolin states that “a theory is falsifiable if one can derive from it unambiguous predictions for practical experiments, such that — were contrary results seen — at least one premise of the theory would have been proven not to [be] true” (Smolin, “Scientific alternatives to the anthropic principle,” in *Universe or Multiverse ?*, ed. by Bernard Carr; Cambridge University Press [U.K.], 2007, p. 323). Arguments

for Intelligent Design, because they include references to non-empirical, transcendent reality, cannot be falsified and therefore cannot be considered scientific. This does not mean, however, that they cannot be true.

4. The only way this question could be answered affirmatively would be to classify bioethics among the “soft” sciences such as sociology or economics. To many people’s minds, the only real science is “hard,” dealing with natural laws (e.g., laws of motion or cosmological constants) and falsifiable hypotheses (e.g., super-symmetry or the Higgs boson in quantum mechanics).