

TRANSMITTING BIOETHICS ON SPIRITUAL WAVELENGTH

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1. THE EMERGENCE OF BIOETHICS

Health has always been in the front line of human interest. The inability of man to drastically intervene in the anatomy, physiology, and even more so in the biology of his body had never created so far the fear that, in this way, he risks to desecrate the functioning of his soul. Therefore, physical intervention was viewed rather positively, and surely was not considered dangerous or hurtful for mental and spiritual health.

Presently, extraordinary terms such as biotechnology, bio-politics, bio-piracy, bio-colonialism, bio-imperialism, bio-industry, bio-confusion, etc. widely circulate in publications and prevail in our discussions; the coupling of biotechnology and informatics, cyberbiotechnology and bio-informatics, places human life in the front line of social concern. This new reality, by making the future a bigger problem than the present, led to the birth of Bioethics, which is more an imperative need than a science.

In the last twenty years, the first research centers were established, (today there are more than 90 throughout the world); related educational and training programs were developed (29 for a Master's degree and since 1990, approximately 20 for Ph.D.);¹ a variety of scientific journals (29 exclusively on bioethics and 5 on medical law) as well as numerous articles and studies of a specialized or popular character are presently being published; a number of scientific bioethical associations (12 until recently) have been formed.² Every modern educational program referring to biomedical sciences, every medical conference, symposium or forum include in one way or the other a seminar, a panel or a lecture of a bioethical character. Moreover, newspapers and the mass media host on a daily basis news reports, discussions or interviews which stimulate the bioethical interest.

Research on life and health does not only preoccupy medicine and biology, but also provokes a new dynamic speculation in the field of human and theological sciences as well.

¹ *National Reference Center for Bioethics Literature*, Kennedy Institute of Ethics, Georgetown University, June 1998, <http://guweb.georgetown.edu>

² University of Pennsylvania, School of Medicine, *Key Organizations and Institutes*, October 1998, <http://www.med.upenn.edu>

In parallel, an increasing number of committees, advisory bodies, legislative adjustments underlines the extent and magnitude of the emerging problems and transforms bioethics from an interesting philosophical occupation to an imminent social necessity.

The reason behind all these is a single coincidence; science and technology, on one hand, offer possibilities, and economy, social mentality and politics, on the other, safeguard the conditions so that the uncontrollable intervention in the DNA of human life often threatens the gene of the human soul. Thus, we are led to a new need; not only to get to know ourselves, but also to play with the risk of either recreating ourselves the way we want it, or destroy them the way we cannot imagine.

And while our thought swings from one direction to the other, science seems to be coldly progressing by refuting constantly the restrictions of committees and overthrowing the prognosis of “specialists.”

The end of the cold war and the infusion of advanced space technology into medicine (Agreement between NASA and NIH, March 28 1993)³ were beneficial to biomedical sciences due to the increasing inflow of funds into biomedical research. In addition, the emergence of new social habits (need for convenience, easy life) and the modern psychological trends (lack of motivation, absence of mental strength, etc.) urge for medical solutions (sterility treatment, face lifting, etc.), which are desperately needed. Therefore, it is not difficult for someone to understand the timeliness, evaluate the importance and foresee the necessity of bioethical education on all levels.

Today’s impressive progress of biomedical applications and their broad practical consequences cause new ethical sensitivities. They provoke, also, the temptation for reviewing the classical criteria of good and evil and the permissible and non-permissible. Finally, they create the need for a consensus in determining the restrictive criteria for protection of life itself and man as a person, as the one who expresses the supreme values, or even as a mere biological species. Fields such as genetic engineering and research programs concerning human genome, gene therapy, reproductive technologies, transplantation, euthanasia, brain death, AIDS, the role of economic interests in medical research, the therapeutic practices and clinical choices incite the human mind, as well as the human relationships, in a completely unpredictable way and give rise to new needs and speculation.

The scientific community is obviously more daring and liberal in terms of accepting both research and its applications, unlike various social groups, which maintain their reservations. Biomedicine uses as its “fuel” the quench of scientific thirst and the challenge of risky knowledge, and much less the desire to improve life and health or the need to create offspring with specific characteristics. Philosophers

³ Newspaper “*ESTIA*,” March 29 1993, p. 5.

seem to be confused, while politicians appear quite compromising with the issue, due to the imminent need for commonly acceptable measures, legislation and provisions.

Religious people, based on the fact that modern society does not consider life as the supreme gift of God, in general, react -often dynamically- to the new terms of life, the new ethics and the new model of man. The feeling that the attempted assault on biological life -which is the temporary human element-, fatally injures the soul - which is the eternal expression of human person-, seems to be completely absent from modern speculation.

1. GENETIC BIO-PROBLEMS

If we want to comprehend the issue, we should examine how the fulfillment of the specific scientific goal leads to a sequence of new and unprecedented problems. The answer to these problems causes confusion, fear and a sense of suffocation greater than the joy and astonishment of the achievement itself. Our capabilities exceed our endurance. We are now able to have such power in our hands that we can no longer control it. This is, indeed, a threat.

In his recent book, “The Century of Biotechnology,” Jeremy Rifkin, lists some of these problems.⁴

a. By reprogramming the genetic code of life, do we undertake the risk to the interrupt an evolutionary development of millions of years?

b. Would the artificial creation of life cause the death of the natural world?

c. Would we become strangers in a world whose population will consist of cloned, chimeric and transgenic creations?

d. Would the creation, mass production and mass release of genetically manufactured forms of life in the environment provoke a non reversible destruction of the biosphere, thus making genetic pollution a greater threat for the planet than the nuclear or petrochemical pollution?

e. What would the consequences of the reduction of the universal gene reserve be for the international economy and society, in order to secure the spiritual property, which is controlled exclusively by a handful of multinational companies?

f. How would the standardization and commercial exploitation of life influence our deeper convictions on the sanctity of nature and its inherent value?

g. What would the sentimental and spiritual consequences be for someone growing up in a world where life is faced as an “invention” and a “commercial property?”

⁴ Rifkin, Jeremy, “The Age of Biotechnology,” trans. Nea Synora, A.A. Livani, Athens 1998, p. 23.

h. What would it mean to live in a world where children are being designed and born by request and people acquire an identity, become stereotypes and are discriminated on the basis of their gene type?

i. Which are the risks we undertake by trying to design more “perfect” human beings?

Of course, these are not the only questions. One could also express his fears and reservations for a possible disturbance of the natural process of reproduction; the derangement of gender balance maintained by the secret laws of nature; the appearance of new epidemiological risks due to the growth of excessively resistant pathogenic bacteria.

The information emerging from the analysis of the human genome may reveal that in reality man has much less freedom of choice than we think he does, or even none at all. As a result, we are led to a deterministic approach to life, which may prove to be catastrophic for man’s free will and our social structure.⁵

Finally, let us not forget that “the technologies of genetic engineering are by nature instruments of eugenics.”⁶ This means that eugenic perception will be imposed on the new coming era without necessarily being called so. Genetic interventions will have as their target the perfection of human kind, not only in terms of health improvement, but also in terms of every absurd and uncontrollable desire (selection of gender, color of eyes, type of hair, etc.).⁷ In this way, there will be a racist classification of people based on genetic grounds.

What will be the relation between invalids, obese, short, bald people, with any kind of abnormality and the genetically superior ones who have rare genetic characteristics? The first ones, along with the fear of mandatory genetic examination, may face unemployment and refusal of insurance coverage. The insurance companies will insure only the healthy ones...

Who would resist the temptation to choose a defect in order to save a life? How is it possible for a society founded on the human kind “perfection,” to embrace with philanthropy the natural “fault” on man? A recent relevant gallop reports that 11% of the couples would have proceeded to an abortion, if their embryo were prone to ...obesity.⁸

However, people possessing rare and special traits would not be regarded as normal human beings, as persons, not even as subjects for research, but rather as “partners,” as cases for exploitation, as objects for investment.

⁵ Bishop of Dimitriadis, Christodoulos K. Paraskevaïdis, “*Cloning and DNA in the Service of Life or Disaster?*” Athens 1995, p. 9.

⁶ Rifkin, Jeremy, p. 236.

⁷ Begley, Sharon, “Designer Babies,” *NEWSWEEK*, Nov. 9, 1998, p. 52.

⁸ Cowley, Geoffrey, “Made to Order Babies,” *NEWSWEEK*, winter/spring 1990, Special edition, The 21st Century Family, p. 98.

Although genetic engineering and biotechnology constitute the best demonstration of technological human power, they may prove to be the most significant expression of human weakness.

2. REPRODUCTIVE BIO-CONFUSION

Let us move from the field of genetic engineering and come to the one of reproductive technologies. Instead of presenting a list of questions, we will limit ourselves to reporting two incidents, which, I believe, are indicative of the way the speed of inventions greatly exceeds the speed of legislative adjustment and the capability of dealing with the emerging problems.

A. The problem of the orphaned embryos. The Rios case.

In June 1981, Mr. Mario Rios, age 54, and his wife Elsa, age 37, from Los Angeles, decided to use the IVF (in vitro fertilization) method because they couldn't have children. Due to her age, Mrs. Rios was unable to join a program in the USA and therefore departed for the Queen Victoria Medical Center in Melbourne, Australia. Mr. Rios had an adult son from his previous marriage, and his wife had a daughter, who lost her life in an accident in 1978 at the age of 10. During the IVF procedure, three ova were taken from Mrs. Rios. Since Mr. Rios had a problem with his sperm, the fertilization was effected with a donor's sperm from Melbourne. One of the three embryos was implanted in the uterus of Mrs. Rios and the other two were frozen at the stage of two to eight cells for possible future implantation.

After ten days, the embryo was miscarried and the couple, without expressing its wishes or intentions about the future of the two remaining embryos, departed for South America, where they adopted a child. Unfortunately, in April 1983, all three of them lost their lives in an air crash.

Since the Rios couple was particularly wealthy, a dispute began for the inheritance of their estate. At one point, a number of relatives who felt they were losing the case, brought to surface the existence of the two orphaned embryos, who were kept in a frozen state in Australia.⁹

The questions were various and the legislation unready to deal with them. Let us see some of them:

1. Which legislation should handle the issue: the American one (since they were American citizens), the Australian one (since the embryos were conceived and kept in Australia), or the South American one, where the accident took place and the family lived?

2. Which one of the legislation was able to solve the inheritance problem?

3. In case of artificial insemination with a donor, California law recognizes the right of fatherhood, after birth, in the person who decides the birth and not in the

⁹ Kenneth, Alpern, *"The Ethics of Reproductive Technology,"* Oxford University Press, 1992, p. 238.

donor of the sperm. It does not, however, include any provision for the fatherhood of the embryos.

4. No legislation included then the status of the embryo, or the right to inheritance of the surrogate mother carrying the embryo.

5. In case both parents died, Australian law gave authority of the embryos' future to the hospital in charge of their freezing. What impact did this authority have on the inheritance rights of the hospital?

Finally, the state of Victoria founded the Waller Committee, which recommended the destruction of the embryos, whereas the competent committee of the state Parliament supported the view of implanting the embryos in the uterus of a surrogate mother, without herself having any right to the inheritance.

Until recently, the embryos are kept frozen at the Queen Victoria Medical Center in Melbourne; the estate remains blocked in Los Angeles; the problem unsolved in courts, legislative bodies and committees; and the question of "why is this happening" unanswered in the mind and conscience of every sensible person.

B. A case of assisted fertilization by donor

I know, at first hand, the following case which reached the courts. A young couple after three years of infertile marriage, ended up to doctors who diagnosed oligospermia (scarcity of sperm in man's semen) in the husband and suggested IVF with a donor's sperm. The operation was successful and after nine months the couple had a charming little girl (1992).

Unfortunately, instead of the child bringing joy and peace, for various reasons, it caused problems to the parents, which led them to divorce after two years (1994). When the father was insistently asking for rights on the child before the judge, the mother just as insistently refused them claiming that the right of fatherhood emerges from the biological and genetic kinship of the father, a fact, which he lacked. To everyone's surprise, she added revengefully that despite this, the father was responsible for alimony, because this does not emerge from the sperm kinship, but from the decision for the child's conception. Her request was to consider the father not as a father to see the child -father of love- but rather as a father to support the child -a father of obligation. It seems that the new reproductive technologies do not only reproduce children, but also produce forms and expressions of revenge and make the human drama more perplexed.

The legislation did not foresee adequately the case and the trial still waits to be completed.

4. MEDICAL BIO-DILEMMAS

The progress of biomedical sciences does not only take place in the field of genetic engineering and reproductive technologies. The fast development of

pharmaceutical technology and the rapid growth of medical technology and industry created a revolution in the traditional medical perception and a chain of reactions, problems and dilemmas, which concern the change of its identity and character.

Thus, the wide use of equipment and the need for numerous and detailed diagnostic lab tests eliminated the directness of doctors' participation in the diagnostic procedure, made them more dependent, limited the drastic role of their mission, depersonalized their relationship with patients and made them think like machines.

In addition, society, which constitutes the "blood donor" of biomedical research and the recipient of its achievements, does not understand the depth of the consequences, has difficulty in pre-assessing the significance of the perspectives and seems unable to communicate with the medical secret. Therefore, a huge number of committees try to regulate the research progress and control its tremendous speed. Many journalists and social philosophers feed on a daily basis their audience with assessments, proving their own confusion rather than society's madness. So, we end up in a conflict between scientific cleverness, which appears as absurdity, and societal prudence, which is manifested as confusion.

The paradox is that the balance between absurdity and confusion is not only determined by knowledge, basic needs and human values, but it is controlled by the economic interest of biomedical companies, which formulate the medical and technological policy.

The entry of technology into medicine did not only bring along an impressively effective know-how, but it dragged along the economy, which modified the medical ethos more than technology influenced the medical practice. Today, medicine is more an enterprise than a science; it involves more scheduling and programming than knowledge and inventions; self-interest of financial profit is more clearly detected in its depths than the pursuit of health or even more the need for human relationships.¹⁰

The immense cost of medical research, coming from the inevitable use of advanced and extremely expensive technology, the costly studies and the perplexity of training and updating (numerous journals, books, publications, as well as traveling, conventions, programs of specialized studies, etc.) transformed the medical education to financial activity and transaction.

Doctors' fees reached such a high level that the average citizen is unable to cover them, and hospital expenses have become even more unreal. As a result, the role of insurance companies was drastically increased. They determine the length of stay in the ICU and the kind of therapy or operation the patient will undergo; if or to whom an organ will be donated, and whether or how the patient will finally survive. The logic behind economic parameters has succeeded the logic of feelings and objective

¹⁰ Archbishop of Athens and all Greece, Christodoulos, *"The Ethical and Spiritual Consideration of Financed Health,"* Athens 1998, p. 9.

needs. The ethics of the confined interests of small groups replaced the universal ethics of eternal values.

The problem became even more intense with the introduction of multinational companies to the exploitation not only of the human body and health, but also of the genetic secrets and the determination of the biological course of humanity.

Medical care and research turned from a private, self-funded enterprise into a massive, national or even international one, requiring high-cost equipment and skilled personnel, and financed mainly by public funds, industry, corporations and private health insurance companies. Thus, today we do only speak of “industrialization” of health, but also about its “commercialization” or even its “corporatization.”

All this change, along with the possibility of cloning man, brings to the foreground the already existing threat of “patenting,” “computerization” and even processing of the biological secrets of man, which he himself ignores.

Turning tissues, cell lines and DNA into commodities violates physical integrity, exploits weak human beings, intrudes indiscreetly into social values, destroys the regulations of research and weakens people’s trust in scientists and doctors.¹¹

Medicine, along with its impressive progress, goes through an identity crisis. Undoubtedly, the gene of technology has decisively influenced the DNA of classic medical perception and has given birth to the unprecedented hybrid of technological man.¹² Man now becomes a group of independent or coordinated accessories and spare parts (gene therapy, organ transplants, artificial limbs and organs, etc.); the grandeur of his nature is abolished, since it is not considered as an indecipherable mystery, but as information for decoding or as a machine for repair.

Furthermore, the whole development led to new invasive techniques and applications, such as transplants, bringing along numerous complex problems which until presently torture our society.

Problems of this kind are the one of brain death, the determination of its criteria, the allocation of donated organs, etc. A draft law is being submitted these days in the countries of the European Union, which introduces the so-called “presumed consent.” According to it, whoever has not refused in writing to offer the organs of his/her body prior to his/her death is considered a possible donor. The decision can be taken by relatives, or, under special circumstances, by some “competent” committee. This is the first time in history that a “donor” is not one who gives what he/she has, but rather someone from whom others take what belongs to him/her, without even knowing about it.¹³

¹¹ Dorothy Nelkin and Lori Andrews, “Homo Economicus: Commercialization of Body Tissues in the Age of Biotechnology”, *Hastings Center Report* 28, no. 5 1998, p. 31.

¹² Fr. Nikolaos Hatzinikolaou, “*Technological Gene! Medical Mutation. Human Hybrid?*”, Opening speech at the E’ Panhellenic Convention of Vascular Surgery, Athens, January 23, 1998.

¹³ Draft Law, Transplants of human tissues and organs, “*ENIMEROSI*” 138, Oct. 1998, p. 19.

Moreover, when is mechanical support considered a prolongation of life and when is it a hindrance of death? The moment of death has a unique sacredness in which man cannot intervene. If mechanical support is not an intervention in God's jurisdiction, then why is its termination?

Questions like the above, as well as medical confidentiality, parental consent, the relationship between doctors and patients, euthanasia etc. complete the picture of bioethical swing in the pendulum of dilemmas and unsolved problems.

5. RESEARCH APPROACH OF BIOETHICS

For the scientist, the ethical criterion is the quality of the achievement. His goal is to achieve something, which will solve a specific health problem, most often in a ingenious way. Although he sees very deeply, he cannot see very broadly, unlike society, which can discern the extent of the social implication, but it cannot easily perceive the depth of scientific applications. The originality of scientific conception, the impressiveness of the achievement, the wide range of possibilities, the immediateness of the results, all are elements which characterize the researcher and are welcomed by society. The social implications or the possibility of altering the human mental and spiritual parameters are out of the spectrum of his vision. He considers this to be the responsibility of others.

Until presently, science approached life as it is, trying to discover its secrets. Now, it approaches life with the intention to create new forms of it. In the past, science tried to find out who we are and what our world is. Now, it is occupied by the need to create, namely to plan, decide and finally achieve what we can become and introduce for the first time in the firmament of human capabilities the constellations of self-creation and self-determination.

The truth is that we cannot conceive the consequences of our genetic research. Their magnitude exceeds the capacity of human mind. The rate of research development is a lot faster than the possibility of pre-assessing the results. Genetic engineering has a triple property: it is inconceivable in regards to its magnitude, unpredictable in regards to its consequences and always sudden in regards to its timing.

The probability of destruction or loss of control is small. However, if it happens, its extent will be immense, unpredictable and non-reversible.

6. SOCIETAL PERCEPTION OF BIOETHICS

If the focal point of scientific bioethics is the quality of achievement, the chief element, which determines societal perception of bioethics is our survival as human species and society. This constitutes its utmost target. Whatever contributes to the uncontrollable expansion of diseases, the destruction of the biosphere and ecosystem,

the derangement of social relationships and balances, the violation of basic human rights is considered ethically questionable.

As a result, society responds to the glamour of scientific discoveries with committees, interests of companies, resolutions and conventions. But is it possible for committees to control the discoveries and for resolutions to replace the financial interests and economic exploitation?

Most often, the members of committees, as well politicians and social carriers, do not comprehend the dynamics and capabilities of science. Science cannot be controlled! Its concepts and methods are extremely difficult for a common mind to understand, and the produced knowledge too specialized. Especially in biology and genetic engineering, the laboratory experiments involve very tiny entities (cells, genes, etc.), therefore, they can be carried out secretly and with no control. What is now being tried, will be publicized a few months later!!! Dolly saw the light of publicity at the age of seven months, following a five-month pregnancy and after 277 unsuccessful experiments, which lasted a number of years without anyone knowing about it. Now, another Dolly may be carried in its mother's womb or even making its most astonishing steps, while the world ignores it.

It is impossible for committees to respond to the scientific impetus; the resolutions or legislative adjustments seem to be quite inadequate to prevail over the dominance of interests. Their role is mainly restricted to the wide use of interrogative or disjunctive sentences. This is why very few committees have proven effective so far. The only hope for illumination and clarity can be found in principles and values.

7. SPIRITUAL BIOETHICS

The backbone of spiritual bioethics is not of course our survival as societies of symbiosis and coexistence, but rather the life of true interpersonal communion and the preservation of the human person as a spiritual entity with godly and eternal dimensions. Spiritual bioethics offers knowledge of the human person, which we lack so much. It does not struggle for superficial concrete solutions, but for a specific ethos; neither for the freedom of choices, but for the preservation of free will. It does not aim at stopping the progress of science, but at cultivating the criterion of truth and prudence in man. It is not interested in the prolongation of life or its genetic improvement alone, but in the integrity of the soul and the psychosomatic harmony of man.

1. Goals and pursuits

a. Preservation of the need for God and the eternal perspective

Protection of the human person basically means that the need for God, the perspective of eternity, free will and the balance between soul and body should remain lively and active within man. Anything that damages the above is considered non-ethical.

To preserve the human person means to maintain the spiritual values active and keep the communication channels open, so that we can receive the messages of the eternal reality, conceive the stimuli of the spiritual world, perceive the footprints of God's presence and discern the characteristics of His divine countenance. If we disregard all these, we may become entrapped in the world that we have created and unable to communicate with the world that was created for us.

b. Protection of our free will

Contemporary biomedicine threatens our free will and freedom. Classical technology was optional; biotechnology and genetic engineering are compulsory. Novel needs, which had never in the past concerned man, demand to be fulfilled. Moreover, the idea of predetermining life seems to limit our freedom. One feels more free before an unknown and unpredictable situation, than before a predefined and carefully planned future. In the first case, we have to act (we are a personal subject), while in the second case something is happening to us (we become a social object).

Ethics of this kind proclaims that life and health do not constitute a commodity or simply a human right, but a priceless divine gift. Therefore, they are not viewed on the basis of economy and selfish interests, or logic and human righteousness, but on the basis of spiritual gratitude and respect.

c. Psychosomatic balance

The body is permanently united with the soul; it places its seal on the soul and vice versa. As a result, the soul recognizes its body and feels all of its alterations. Every intervention in the body should protect this unity and harmony and not hurt it.

In our era, the prevailing anthropologic perception, western in its nature and origin, ignores the power of freedom, the daring of truth, the clarity of universality, the sensitivity of faith and the logic of ascesis. Instead, it projects a human being whose course towards the truth is being controlled by external laws, set by opinionated commandments, obstructed by presumed fears and confused by lifeless virtues, unfounded arguments and often by non-convincing interpretations.

Any kind of solution to the problems or dilemmas, however, must be characterized by the balance between love towards man -the natural element-, and love towards the truth -the spiritual element. It is impossible to have the one without the other.

Therefore, any approach to these problems should embrace man humanely (with spiritual love towards man) and not only humanly (with natural, weak and emotional love) and stimulate the sensitivities of his soul with discretion and gentleness.

2. Criteria of bioethical intervention

The following criteria of spiritual bioethics must be fulfilled:

a. Freedom and absence of scholasticism

In order to perceive the truth you must be free; to accept it you must be brave. We should not be scholastic in our way of thinking, neither narrow-minded in our disposition. Ethics must be more explicit in regards to the criterion of our speculation and less scholastic in regards to the proposal of solutions. Its role is to reveal the truth and not to replace freedom.

Western perception, after transforming man's mind to cold-blooded logic and thought and his heart to a mechanic response to stimuli, it has projected man's physical dimension to such an extent that it identifies him solely with biological life. So, according to the western and materialistic point of view, the utmost good is biological life. On the contrary, for us, the Christians of the East, the supreme good is the "happening" of each person's soul which, although effected within history, it is growing within eternity. This is not of secondary importance, of course.

The West is dominated by scholasticism in its approach to life. It fears mistakes for it pursues earthly perfection and believes in human ability and ephemeral responsibility. On the contrary, in Orthodoxy, mistakes and sins are expected and are not surprising. Our salvation does not rely on human abilities, but it is found in the love and mercy of God. Mistakes are acceptable and compatible with our nature. We watch out for them, but we are not afraid of them.

Western scholasticism leads to rigid conservatism, which actually is a one-sided preoccupation with the earthly dimension of man. It is characterized by an unhealthy need for self-protection, yet it seriously inflicts faith and hope in divine intervention. God's grace is always more effective than the greatest human effort.

b. Prudence and respect of nature

Nature is stronger than man and produces better products, even if is characterized by defects and imperfection and its laws are laws of decay. We can achieve more health, but not better health. This is why we need to stand before the new and yet unexplored knowledge with prudence and humility, and before nature with respect.

c. The need to determine the boundaries of necessity and desire

The emergence of "unnecessary" needs stigmatizes biomedicine with long-term hopes and short-term consequences, transforms promises into dreams and perpetuates the logic of needs. For this reason, the aim of research and the specifications of applications must not satisfy dangerous inquisitiveness and false desires, but they should serve essential needs.

d. Knowledge of history

It is necessary to avoid the mistakes of the past and learn from the destructive consequences of our scientific and technological arrogance. For instance, the experience of nuclear threat or ecological destruction, which have been already effected by technological progress, could and should make us more prudent in view of an eventual biotechnological calamity.

8. CONCLUSIONS

A. Contemporary science looks like an amazing car. Who could limit its frantic speed? Yet, who would dare trust its incredible promises? High speed makes long distances short, but may cause serious accidents. It requires perfect roads and experienced and gifted drivers. The clarity of our goals and pursuits, as well as the insight of our future, constitute the road –what we want and why we want it. The highway of contemporary biomedicine seems to be full of street holes. Modern man is a good designer and manufacturer, but is he a good driver as well? It is easy to create and invent, but it is very difficult to inspire and direct.¹⁴

B. Genetic engineering -we recently heard about it- is already using metaphysical terms. It speaks about cloning offspring or the “enzyme of imperishability,” thus promising man biological immortality and earthly eternity. Nature, however, has its own laws and secrets. The more we reach the distant points of the universe, the faster they move away (Hubble’s Law). The greater the accuracy in finding the exact position of an elementary particle, the higher the probability error in measuring its velocity or momentum (Heseinberg’s Uncertainty Principle). Respectively, each illogical move towards biological imperishability of the human body stimulates the catastrophic protest and reaction of nature (calamities, uncontrollable fires, environmental pollution, ozon layer disruption, massive epidemic diseases and destruction, etc.). The more we try to forget the laws of disintegration biologically, the more nature reminds us of them mechanically. In addition, the closer we come to the mystery of life, the more we lose the elixir of soul’s immortality. Whatever biologically eternalizes man, it spiritually deprives him of the sense and essence of his immortality. Refusing to accept the reality of death transforms it from a momentary event to a predominant condition. Death only eternalizes and immortalizes...

C. The search for the unknown cannot be controlled; it exercises a unique charm. “Games” with risk cannot be obstructed; they are irresistibly attractive. What presently provokes fear and suspicion, in a few years will be legalized and passively accepted. The committees of society will consider it as ethical, but it will not be so. It will have profanely influenced the essence of ethos and ethics. It will have adulterated the criterion of good and evil and disorientated the vision of godlike man. Biotechnology will have not only manipulated the genetic material of man, but will have substantially mutated life, and brutally deformed even the human soul itself.

Perhaps the term biotechnology or genetic engineering will prove to be inadequate in expressing the range of its achievement. Already, we have proceeded to the “technology of the soul” and the mechanical processing of the person. The man made person will replace the godlike one, the person created by God bearing His own godly features. Human intelligence will devour every vigor and fragment of divine

¹⁴ Fr. Hatzinikolaou, N., “*Technological Infusion! Medical Diffusion. Personal Confusion?*” speech presented at the 1998 E. Stanley Crawford Critical Issues Forum, “Information Technologies for the Next Millennium,” June 8, 1998, San Diego, California.

breath in man. Even the priceless gift of free will, which constitutes a divine endowment without boundaries and limits (this is why we do what we do) will be sold and bought by companies controlling our life and soul under specified conditions. The final totalitarianism will be imposed; we will be able to perceive it but not comprehend it, to ascertain it but not be aware of it...

D. Societies always develop mechanisms of defense and find ways to overcome the fears they create and the threats they provoke. Survival is finally achieved. What is constantly in danger and being mistreated, and ultimately fluctuates throughout history is the zest of values, the power of ideas, authentic happiness -not fleeting success. It seems that our technological and scientific era is on the verge of a tremendous success, at the peak of its potency, at the threshold of revealing the very secret code of life. Our society is so strong that endures its achievement, but does it also acknowledge its inadequacy or face its unhappiness, or even avow its failures? Do the factors increasing its activeness also improve the range of its perceptiveness?

D. It seems that we will probably reach an abortion and a cloning: the abortion of free will and the cloning of thought. Nature has its secret balances. The body lives as long as the soul lasts. Biological decay is the defense against the psycho-spiritual degradation. The extensive variety of each person's features, which make his countenance singular, underlines his uniqueness for it reflects the singularity of his soul as well. The ugliness and defection of his bodily features emerge from comparison, and comparison springs from the differentiation, which stresses our uniqueness. Therefore, our imperfections protect our person and our free will. The abortion of our free will from the uterus of our society will transform our world to a single-person family and our thought and personality to a cloned derivative.

Perhaps, a society of perfect and identical copies is more unsuccessful than the natural beauty of multiformity that has the dignity to offer a place to ugliness, accept imperfections, acknowledge illnesses. Now, we cannot be similar to each other. In a few years, cloning will prevent us from being different.

F. It is necessary to have a balance between soul and body. Their life span is interdependent. The duration of life of man is seventy years. *"As for the days of our years, in their span they be seventy years. And if we be in strength, mayhap eighty years; and what is more than these is toil and travail"* (Psalm 89, 10-11). This holds for the man of biology. Surely, not for the man of technology.

Biological life constitutes the one-dimensional projection of our soul (physical and spiritual) on the world of space, time and matter. Similarly, physical man as soul and body is the projection of our eternal and immortal person on the world of nature and imperfection¹⁵. Today's era struggles for the prolongation of our biological life,

¹⁵ The soul has two different aspects: the physical and the spiritual one. Physical soul is basically our psyche, what the psychologists and the psychiatrists examine. It is the seat of the sentiments, of behavioral characteristics, of natural idioms given to man. On the contrary, spiritual soul is where our free will finds its full expression. It is the part of the soul responsible for faith, sin, repentance and salvation; it is our immortal and eternal aspect. The physical element of the soul connects the spiritual

while our mental endurance is extremely low and our spiritual one is constantly being reduced. Nature, however, takes its revenge; it responds to the prolongation of life with an explosion of mental and neurological diseases, such as Alzheimer disease. Excessive technology and genetic engineering may lead us to a situation where bodies hosting paralyzed souls will have difficulty in passing away! The depletion of life's reserves must be synchronized with the weakening of the forces of the soul. Life should not only be prolonged biologically; it should be eternalized spiritually. The more the soul functions within the perspective of eternity, the more the body endures its biological identity.

Thus, technology becomes a technique and not an art; an expression of power without aesthetics, beauty and truth. We have already lost the sense of beauty and the knowledge of truth. The new world will have strength, but no life. It will replace determinism by creation, but will be deterministic in regards to its motive, method and results. It will originate from and conclude in the weak human will. It will no longer oscillate...

G. Let us see now the other side of things. The car of biotechnology is the fastest in history; it uses as its accelerator the uncontrollable excitement and attraction of science and the unknown. Its fuel is smartness and intelligence. The faster a car, the better brakes -namely prudence-, and steering wheel -namely ethical values and spiritual wisdom- it needs.

Intelligence is related to speed, prudence to safety, and wisdom to the very truth and beauty. The beauty of the created world is the bridge to the extraordinary beauty of the uncreated world.

If we are based on the above principle, then biotechnological research does not only play with the risk, but may also provoke the discovery of beauty and the revelation of truth. This is one benefit derived from biomedicine. There are others emerging from the contrary, too.

We may finally end up to the conclusion that we are something greater than well-ordered genes or mapped genome. At the same time, we are so weak and insignificant that we are neither able to create, nor even destroy ourselves. We are so free that we can even devour our own free will. This is what the protoplasts did and we repeat. We are not suffering because of their original sin; we can also repeat the original sin ourselves. At the same time, however, we can better understand ourselves, more accurately determine our limits and more explicitly discern our capabilities.

Consequently, our faith in miracles and the quest for a truth that exceeds the laws of nature and the power of man may naturally come to light. Having rejected the miracle of God's creation, we may be forced to hope for the miracle of the repair of

with the biological one; the eternal with the ephemeral. It is interdependent with both the breath of God in us -our spiritual soul- and the physical body.

our own “creation.” Perhaps, only through a miracle the world of our own “hands” could be fixed.

Finally, the confrontation of this dilemma may turn out to be the greatest success of contemporary biomedicine. It is more significant than the scientific achievement itself, for it leads to true living and self-knowing. The most that the achievement may grant is the delusion of success or the illusion of better ways of living. Under the pressure of unanswered dilemmas and critical decisions, our conscience receives its most illumination and our soul develops its most delicate vision.

We all, both as individuals and as a society, need a transplantation of mentality and a mutation of ethos and spirit. We need to recombine the “genes” of our souls and spirit so we can pass from the ambition of the technology of life to the self-awareness of the “technology” of the soul. Immortality is not achieved with the engineering of our genes, which are mortal, but through the metamorphosis of our soul, which is immortal. Nor the new life, the one which our Church calls “the other life” (with a double meaning of course) can be manufactured with transgenic chimeras in the laboratory, but rather it is realized through the discovery of the theanthropic (godly-human) person of man in the sanctuary of our soul. The transgenic works of biotechnology create chimeras, while the transformational union of man with God gives birth to persons. This constitutes a verification of an inherent reality and not an invention or fabrication of the mind.

There is always hope that our world will find a balance in its final oscillation; the oscillation between our own return to God’s creation and the expectation of the apocalyptic return of God to creation. This will no longer be an oscillation; the pendulum of the human soul will rest in its stable and sole equilibrium position; the position of eternal coordinates and godly specifications.