

Issues of Philosophical Anthropology Resulting from the Impact of Biotechnology on Human Nature

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Abstract:

The title in discussion has two areas: philosophical anthropology and biotechnology. Both are new areas in the field of knowledge; however, chronologically the former precedes the latter.

Biotechnology is a recent phase of the technological revolution. The advancement of scientific knowledge has made possible sophisticated modes of technical intervention on the physical constitution of humans as well as on animals, vegetation and the environment in general. Modern technology has yielded new information on the structure and operation of organic life and made possible artificial intervention on organisms in general, and on humans in particular, in a way that was only hypothetical some decades ago. This intervention has unleashed experimentation, not only therapeutic, on the structures of organic life. It is another sign that technocratic culture has affected every sphere of life, reducing life to mere mechanical motion. Biotechnology is the most ambitious dream of *homo faber* which aims at modifying the organisms.

In the order of presentation of the article, therefore, a brief exposition of both will occur together with an explication of how the impact of biotechnology on human nature creates issues and concerns in the field of philosophical anthropology.

Key Words: Homo faber; Anthropocentric; Noumena; Besouled organism; Artificial intervention; Manipulate;

1. Introduction

Generally speaking, contemporary trend of thought is characterized as humanistic and anthropocentric. Human nature is a multi-dimensional phenomenon which is partly disclosed and is largely in the state of potentiality. This leads to the consideration of human nature as being something so mysterious that no answer or definition can suffice to exhaust all of its nuances. This is why in the history of all human research, various disciplines, starting with the Greek schools has been developed by various thinkers to unravel this mystery of human nature, though without completely succeeding. As an important discipline, philosophy also, to be relevant to contemporary culture, is obliged to continuously search to find an answer for the 'human' question: Who is a human being? or What does it mean to be a human being?

2. **Philosophical Anthropology: A New and Wholistic Discipline**

The old discipline psychology, which had the soul as its subject matter, but acted as if it were studying the whole human nature, has come to be substituted during the contemporary time with the new discipline philosophical anthropology. Up to the eighteenth century, the discipline philosophical psychology was taught as an integral part of the philosophy course. As a discipline, philosophical psychology consisted only of the study of the human soul in a strict sense, but in the eighteenth century Christian Wolff¹ divided it into rational psychology and empirical psychology. For Wolff, rational psychology would provide a definition of the essence of the human soul and its metaphysical base, while empirical psychology would deal with the subjective experience of human cognitive and appetitive operations.² What was originally called philosophical psychology, after Wolff, came to be called rational psychology; but after another two hundred years, that is during the latter part of the twentieth century, it has taken another name, viz, philosophical anthropology.³ With the birth of this new discipline, the term psychology is left to the areas of behavioral, therapeutic or analytic studies of the human psyche. What was covered by rational psychology, together with all other philosophical studies on human beings, is now incorporated into this new discipline of philosophical anthropology. Though it had had two hundred years of history, only in the latter part of twentieth century did it establish itself as a scientific discipline with its own identity.⁴

After Christian Wolff, Immanuel Kant and Max Scheler are considered as some of the most important pioneers in the development of this new discipline. Kant opined that philosophical psychology cannot be a proper science because its methodology is subjective and individualistic. He wanted to have an objective method to study human beings as a whole. His critique of philosophical psychology resulted in an integral philosophical study of human beings. “It is in this way, in the light of fundamental questions about the peculiarity of a human being, that the twentieth century saw the establishment of philosophical anthropology”.⁵

¹ Christian Wolff (1679-1754) was a rationalistic school philosopher in the German Enlightenment. During the period between the death of Leibniz (1714) and the publication of Kant’s critical writings, Wolff was considered as the most influential philosopher in Germany.

² Cfr. CHARLES A. CORR, “Wolff, Christian”, in *Routledge Encyclopaedia of Philosophy*, ed. Edward Craig, 10 vols. vol. IX, Routledge, London 1998, 782.

³ Cfr. A. VERGOTE, *In Search of a Philosophical Anthropology: A Compilation of Essays*, Leuven University Press, Leuven 1996, 15.

⁴ In most of the western universities, the subject area formerly known as philosophical psychology is being replaced with the title philosophical anthropology during the last two decades.

⁵ A. VERGOTE, *In Search of a Philosophical Anthropology*, 25.

After Kant, the contribution of Max Scheler⁶ is momentous in the establishment of philosophical anthropology as a new discipline for the study of human beings in their totality. “Actually in a philosophical anthropology, every possible philosophical question arises while remaining centered on the human being”.⁷ It is a study of human beings about themselves and in all their dimensions.⁸

Psychology as a discipline was concerned only with the soul or psyche or mind; thus it reflected a dichotomy in human reality as soul and body or spirit and matter or noumena and phenomena. This dichotomy not only fails to recognize the difference between the psychological and the physiological, but it also fails to see that man reconciles both of these within the depths of his human nature. Therefore if psychology is to become a real philosophical study of human beings it cannot limit itself to the spiritual dimension alone, but must extend its “observation to the *whole man*...It must be a science of man as man”.⁹ This new vision about the human being was fulfilled by the introduction of philosophical anthropology, which sees the human being not as mere body or soul but a substantial union of both; and basing on the Thomistic tradition it also considers the human being as person. As Brennan would observe, “what we need today, as Thomas Aquinas would indicate, is really less of psychology and more of anthropology...the study of man as man and the study of man as a besouled organism, or as a creature composed of matter and spirit.”¹⁰

3. Biotechnological Interventions on Human Being¹¹

Since biotechnology is a result of scientific and technological advances, it is necessary to study briefly the situation of technology before addressing biotechnology itself. Such study is basically philosophical anthropological, because the focus is on examining how technology

⁶ Especially *Der Formalismus in der Ethik* (1913), *Mensch und Geschichte* (1926) and *Die Stellung des Menschen in Kosmos* (1928) are of sufficient importance in this field.

⁷ A. VERGOTE, *In Search of a Philosophical Anthropology*, 26.

⁸ Cfr. S. VANNI ROVIGHI, *Uomo e natura: Appunti per una antropologia filosofica*, Vita e pensiero, Milano 1981, 10.

⁹ ROBERT E. BRENNAN, *Thomistic Psychology: A Philosophic Analysis of the Nature of Man*, Macmillan, New York 1952¹², 340.

¹⁰ ROBERT E. BRENNAN, *Thomistic Psychology*, 357. The concept ‘besouled organism’ of R. Brennan would be introduced by Paul Ramsey as ‘Ensouled’. Cfr., P. RAMSEY, *The Patient as Person*, Yale University Press, New Haven 1970, xiii.

¹¹ To study the potential threats coming from the issues of biotechnology to real essence of human nature the philosophical biology of Hans Jonas (1903-1993) is used as a theoretical base. Hans Jonas is one of the pioneering philosophers who reflected systematically on the ramifications of technological growth on human organism and the crisis created by it.

affects the integral nature of human being and how it affects inter-relationships of human beings and nature.

At the start of the modern era Cartesian notions affirmed the ontological dualism of mind and matter which led to materialistic and mechanistic notions of the human being which left no room either for an adequate philosophical interpretation of organic individuals, or for the identity and dignity of the body of any living organism.¹² This loss of the metaphysical concept of the substantial unity of the human being and the alienation of his physical substance from him as accidental, caused a paradigm shift in the notion of man. It also led to scientific and technological overriding of his nature during the modern and postmodern periods.

3.1 Technological Overriding on Human Beings

Technology has become an omnipresent phenomenon in all dimensions of human existence. It has become an essential ingredient of human life that technological devices have become indispensable for everyday living.¹³ Human history is filled with records of tools and technologies. Epochs are named by their most important technological developments: the Stone Age, the Bronze Age and the Iron Age; or the Agrarian Age, the Industrial Age and the Information Age. As Herder points out, man by nature is a weak and deficient being in comparison to the animals. At birth he is the weakest and the most dependent of all the animals.¹⁴ Therefore man must compensate for his lack of natural tools and weapons by the creative use of science and technology. Through technological development, walls that stood as obstacles to the human growth, have been demolished. However, there are many issues raised by the impact of technology on human beings.

Modern technology from its being a finite and proximate end, seems to have become the goal and ultimate destiny of humanity. This aspect of modern technology is seen as self-destructive, because while technology through its positive feedbacks and achievements assures the growth of mankind, it poses itself as an inevitable end. The constant growth in technology promises a new age of opportunity in all aspects of human life.

¹² Cfr., H. JONAS, *The Phenomenon of Life: Toward a Philosophical Biology*, Northwestern University Press, Evanston, (IL) 2001, 56.

¹³ Cfr., H. JONAS, "Toward a Philosophy of Technology", in *Readings in the Philosophy of Technology*, ed. David M. Kaplan, Rowman & Littlefield Publishers, Inc., Lanham 2004, 19.

¹⁴ Cfr. J. G. HERDER, *Ideen zur Philosophie Geschichte der Menschheit*, Fourier, Wiesbaden 1985, 118.

In this way science and technology have transformed the contemporary culture to be essentially techno-scientific.¹⁵ The tremendous growth of modern technology and its domination over mankind is expressed today by the terms mega-technology or technocracy. Modern technology's scope is seen by some authors not only to control nature but also to conquer time and space. It offers a transcendent hope to achieve the eternal and the omniscient.¹⁶

3.2 From Technology to Biotechnology

Biotechnology is a recent phase of the technological revolution. The advancement of scientific knowledge has made possible sophisticated modes of technical intervention on the physical constitution of humans as well as on animals, vegetation and the environment in general. Modern technology has yielded new information on the structure and operation of organic life and made possible artificial intervention on organisms in general, and on humans in particular, in a way that was only hypothetical some decades ago. This intervention has unleashed experimentation, not only therapeutic, on the structures of organic life.¹⁷ It is another sign that technocratic culture has affected every sphere of life, reducing life to mere mechanical motion. As Jonas succinctly puts it, biotechnology is the most ambitious dream of *homo faber* which aims at modifying the organisms.¹⁸

3.2.1 Biotechnology and Genetic Engineering (Engineering with Life)

Biotechnology is directly connected to the biosphere.¹⁹ It gives scientists the ability to manipulate genes and thereby change the characteristics of an organism. This is intended to bring about increased food production, revolutionary new medicines and medical practices like transplantation, enhanced physical beauty, intelligence, and strength towards a better or super human race.²⁰

Genetic engineering is one of the practices in the field of biotechnology and it is defined as “the manipulation of genes through the use of recombinant DNA techniques for the purpose of

¹⁵ Cfr., B. MONDIN, *Una nuova cultura per una nuova società: analisi della crisi epocale della cultura moderna e dei progetti per superarla*, Editrice Massimo, Milano 1982², 71.

¹⁶ Cfr., J. CAREY, *Communication as Culture: Essays on Media and Society*, Routledge, New York 1992, 116.

¹⁷ Cfr., H. JONAS, *Philosophical Essays: From Ancient Creed to Technological Man*, The University of Chicago Press, Chicago 1974, 141.

¹⁸ Cfr., Idem, *The Imperative of Responsibility*, 21.

¹⁹ Cfr. Idem, *Philosophical Essays*, 144.

²⁰ Cfr., L. TAGLIAFERRO, *Genetic Engineering: Progress or Peril?*, Lerner Publications Company, New York 1997, 7.

modifying the function of a gene or genes for a specific purpose.”²¹ In a technical sense, genetic engineering refers to specific technical interventions in the structure of the gene for a variety of purposes; to remove a harmful gene, to change the genetic structure of an organism, or to enhance a particular genetic capacity.

3.2.2 Specific Characteristics and Goals of Biotechnology

Biotechnology opens up the possibility of not only designing the descendants, but also manipulating the entire eco- and bio-systems for a variety of purposes. The therapeutic and bio-production technologies, recombinant DNA research and other applications of the knowledge of the genetic studies not only involve the technological dimensions but also the ecological and ethical dimensions.²²

Such biotechnological practices can modify and engineer the genetic patrimony of somatic and germinal cells of the organisms to produce new genetic characters or to alter (amplify or suppress) the existing characters. Further, the techniques of artificial insemination which confirm the maneuvering of embryos, the practice of surrogate motherhood, the possibility of inter-species fertilization to produce interbreeds (for instance producing man-animal hybrids with the purpose of having subjects for subhuman functions),²³ forming organ banks, promoting eugenics, artificially prolonging life and postponing natural biological death are some other possibilities opened up by such artificial and curious intervention into life with the help of science and technology. Biotechnology also promises to prevent, through genetic screening and prenatal genetic diagnosis, pathologies which are hereditary.²⁴ These were considered science fiction, but biotechnology predicts that they can be realized.

With these diverse possibilities at hand one can ask whether these biotechnological endeavours are anthropological and in accord with the integrality and dignity of the human person. Can life be created, modified or destroyed by technological processes? Is there any limit to the interference of science and technology on organisms and particularly on humans?

²¹ M. L. STEINBERG - S. D. COSLOY, eds., “Genetic Engineering”, in *The Facts on File Dictionary of Biotechnology and Genetic engineering*, Checkmark Books, New York 2001, 92.

²² Cfr., H. JONAS, “Ethics and Biogenetic Art”, in *Social Research*, 52 (1985)3, 493 - 494.

²³ Cfr., *Ibid.*, 503.

²⁴ Cfr. L. R. KASS, “The Wisdom of Repugnance: Why We Should Ban the Cloning of Humans”, in *New Republic*, 216 (1997), 17.

4. Impact of Biotechnology on Human Nature

Deterministic tendencies, brought about by the advances of technology and the latest biotechnologies, have reduced the human being to a mere object or product or commodity. In any experimentation with human beings, a person is reduced to an object of experimentation, or a sample or a 'guinea pig'.²⁵ The singularity and superiority of human nature is threatened by the speed and audacious development of biotechnological endeavours by which the image of man, and possibly the survival of the species are in jeopardy.²⁶

Biotechnology, first of all, has to be differentiated from the medical practices. It does have some aspects of medical nature especially through its therapeutic and birth technologies. However, beyond health and medical aims, it can be detected that biotechnology has ambitious motives in experimentation for the sake of perfection or creating perfect beings. These motives are ultimately utilitarian.²⁷ This aspect of biotechnology is described as 'playing God' by the scientists.²⁸ More than any other technical influence in human history, biotechnology deals directly with the human being and human nature because it tries to manipulate, repair and meliorate the basic composition of the human organism.

4.1 Biotechnology: Engineering the Engineer

Those who support biotechnological interventions say that it deals only with the physical aspect of man and that it does not tamper with the soul or with personhood. Biotechnology, by considering the body as something that can be manipulated, engineered and modified, has in the process, lost the real meaning of the soul, because it has ignored that it is this body which is ensouled and en-formed by a spiritual element. In other words, the loss of the real meaning of the human soul can lead to the loss of attention to the integral meaning of being a human, a meaning often illuminated by religious and metaphysical insights.²⁹

In the milieu of fast growing biotechnological endeavours, the individual human being has degenerated into an object and is considered as a mere body or a bundle of cells, tissues and organs which can be modified, enhanced and created anew. Man is a complete organism in which the body is a substantial property. The manipulations of the cells, genes and tissues of the

²⁵ Cfr., H. JONAS, *Philosophical Essays*, 107 - 108.

²⁶ Cfr., Idem, "Toward a Philosophy of Technology", 28 - 29.

²⁷ Cfr., Idem, *Philosophical Essays*, 165.

²⁸ Cfr., P. RAMSEY, *Fabricated Man: The Ethics of Genetic Control*, Yale University Press, London 1970, 90.

²⁹ Cfr., G. C. MEILANDER, *Body, Soul and Bioethics*, University of Notre Dame Press, Notre Dame 1998, 2.

body are not only done in the physical aspect of man. They also affect the whole person. Surrogate parenting can be taken as an example where the totality and dignity of the human body is violated. It denies the meaning and worth of the body and treats it as a mere incubator and deprives it of its integral dimension. It becomes a place for buying and selling human flesh.³⁰ When a man is cloned, the irreplaceable bodily form that belongs to the individual is violated. A man's bodily form also is an asset of individuality and when it is artificially replicated it goes against that. The human body has a claim to sacrosanctity according to human and divine law. This sacrosanctity requires that it be not used as a mere commodity.³¹

4.2 Biotechnology and Perfection of the Human Being

Recent biotechnological interventions in human nature have profoundly changed the traditional views of the human being. They, whether therapeutic or melioristic aim to intervene with the human physique in order to produce a perfect man. This concept of perfect man is expressed in many ways: sickness-free man or humanity without suffering; genetically enhanced man or optimal man or superman, for whom there are no obstacles like sickness, aging and death.³²

However it is a distorted notion of perfection. Biotechnological motives are connected with eugenics and the desire to produce the best genetic group or to enhance the human race by controlling its genetic makeup and thereby create perfect human beings.³³ Eugenics can be positive or negative. Generally it is accepted that the negative eugenics is concerned with therapeutic motives and therefore connected with health. The positive or melioristic eugenics deals with improving the quality of the race so as to make it more perfect than nature has made it.³⁴ In a utilitarian sense, this can appear beneficial and promising for the future. Yet it raises many important philosophical anthropological and ethical issues: selective breeding, making the best to survive and destroying the innovative creation of nature are some of the issues.³⁵

³⁰ Cfr., L. KASS, " 'Making Babies' Revisited," in *Bioethics*, ed. T. A. Shannon, Paulist Press, New Jersey 1991², 445f.

³¹ Cfr., P. BECCHI, "Technology, Medicine and Ethics in Hans Jonas," in *Graduate Faculty Philosophy Journal*, 23(2002)2, 166.

³² Cfr., H. JONAS, "Ethics and Biogenetic Art", 500.

³³ Cfr., H. JONAS, *Philosophical Essays*, 147; also cfr., D. MCCARTHY, "Persons and Their Copies", in *Journal of Medical Ethics*, 25(1999), 99.

³⁴ Eugenics held an attraction for the Nazis to produce a super-human race.

³⁵ Even planned mating, based on genetic charts of the partners and family histories also falls under this aspect of eugenics. Jonas warns that this "leads to the institution of human studs, eugenically certified semen donors,

Affirming some qualities as the best and most excellent against other human qualities leads to a consumerist and diminutive notion of the human person. The excellence, quality, quantity, merits and benefits that are found in humans are relative and have a trans-empirical certainty.³⁶

Philosophical anthropology sees the imperfection of man in a transcendental sense, where perfection is perceived as an attaining of the full realization of his being as a person in an integral and wholistic sense. In this sense, biotechnology has lost the true sense of human nature and its integral growth towards perfection.

4.3 Biotechnology and the Gender Perspective of Reproduction

It is reasonable to fear that biotechnological processes could change human nature and natural ways of acting. Birth techniques introduced by biotechnology, especially techniques of cloning, are clearly different from traditional reproduction in that they let sexually reproducing organisms multiply asexually. If human cloning project becomes a reality, it will be possible to bring forth offspring independent of any male. The only remnant from traditional sexual reproduction would consist in the fact that the “donor nucleus (male or female) needs for its proximate ‘host’ a female ovum.”³⁷ The male sperm becomes unnecessary as the donor nucleus can come from a cell of the woman and the egg-cell obviously comes from a woman. It may be noted that nothing prevents a woman from having a complete duplicate from her own body: the donor cell and the egg-cell come from her, and she can be the surrogate mother as well – a total liberation from male domination.³⁸ Besides cloning, other birth technologies like surrogate motherhood, artificial insemination or in-vitro fertilization have made the female an instrument when compared to her previously dignified and creative act of reproduction as a mother. As Kurt Bayertz observes, with biotechnology human birth has moved from reproduction to production or from breeding to engineering.³⁹

eventually also ovum donors, with artificial insemination (and inovulation) replacing the sexual act - thus to a complete separation of love and sex from procreation, of marriage from parenthood.” H. JONAS, *Philosophical Essays*, 152.

³⁶ Cfr., *Ibid.*, 158.

³⁷ H. JONAS, *Philosophical Essays*, 155.

³⁸ Cfr., *Ibid.*

³⁹ Cfr., K. BAYERTZ, *Genetics: Technological Intervention in Human Reproduction as a Philosophical Problem*, trans., Sarah L. Kirkby, Cambridge University Press, Cambridge 1994, 75.

5. Philosophical Anthropological Issues Created by Biotechnology

Biotechnological intervention has no doubt helped to explore the human reality more profoundly. It opens up new ways of knowing the human being. Advances in biotechnology have resulted in a significant increase in our knowledge about the human embryo and embryonic development and has resulted in greater self-understanding of man. The revelation of the genetic structure of the human being offers a genetic code or genomic project which is an empirical way of knowing the self and its place in nature. It further claims to tell man about his legacy from the past, present design and future fate. This is seen as a form of human empowerment. Genetic information has taken on increased importance, as scientists discover from genetic screening, the genes responsible for many diseases and disorders.

It is true that biotechnology, besides its benefits for humanity, has created a crisis situation with regard to the traditional integral view of man. Biotechnology abolishes the spiritual side of man and asserts that man is only a physical being. The body, in biotechnological consideration, has the tendency to become a precarious vase holding valuable information.⁴⁰ While the body is destined to die, the information contained in it in the form of DNA, is destined for a kind of immortality. Some scientists regard the mysterious structure of DNA as a secular equivalent of the spiritual soul. The physicalist tendency in biotechnology which reduces the human being to the body alone leads to its commodification in a consumerist sense.⁴¹

Philosophically, the devaluation of the body of man started with Plato who considered the body as the prison-house of soul.⁴² Descartes bequeathed to his successors the dualistic view of the human being, which paved the way for a mechanistic understanding of human reality. His ideas led to the concept of man as a ghost in the machine, because the body is understood as a complex machine and the soul is the ghost that makes this machine function.⁴³ Later Nietzsche asserted “I am my body.”⁴⁴ Sartre thought that the consciousness of the body of man is identified

⁴⁰ Cfr., J. RIFKIN, *Il secolo biotech. Il commercio genetico e l'inizio di una nuova era*, Baldini & Castoldi, Milano 1998, 343. (English: J. RIFKIN, *The Biotech Century: Harnessing the Gene and Remaking the World*, Jeremy P. Tarcher - Putnam, New York 1998.)

⁴¹ Cfr., L. A. SHARP, “The Commodification of the Body and its Parts”, in *Annual Review of Anthropology*, 29(2000)10, 287 - 328.

⁴² Cfr., PLATO, *Phaedrus*, 82e, 66.

⁴³ Cfr., R. DESCARTES, “The Passions of the Soul,” in *The Philosophical Works of Descartes*, trans., E.S. HALDANE - G.R.T. ROSS, vol. I, The Cambridge University Press, Cambridge 1968, 350.

⁴⁴ F. NIETZSCHE, *Untimely Meditations*, trans., R. Hollingdale, Cambridge University Press, Cambridge 1985, 66.

with the being of man.⁴⁵ Feuerbach and Marx promoted a materialistic anthropology where the human reality was reduced only to its materialistic aspects.

However, according to an integral notion, man as an embodied and ensouled being, where the body and soul have their proper and substantial union. The ‘embodied’ and ‘ensouled’ approaches treat the person as a unique individual who is inseparably unified in body and spirit.⁴⁶ In the discussions of biotechnology, it is important that the substantial unity of the human being as an individual and living being of a particular type and species be emphasized.

6. Conclusion

The study of biotechnology is recent, but lively and intense, and it is assuming a remarkable position within current philosophical discussions. An analysis of biotechnology would show that it, like any other technology, has its pros and cons. The technology humans developed in the past was dealing with inanimate objects and could be abandoned if found to be problematic.⁴⁷ However, biotechnology now makes possible the formation of products that are themselves alive and affect the very core of life and therefore it requires a careful re-examination. The living products of biotechnology may not be under human control in the future and could develop into new forms of life with unexpected consequences like generation of freaks. Jonas compares such activity as equivalent to the opening of Pandora’s Box.⁴⁸

Advances in biotechnology have led humanity to a position to actualize that which was only a fantasy and theme of science fiction some decades ago. Such capacity of biotechnology to challenge and change human lives calls for a careful reflection on what it means to be human and man’s place in nature. Therefore a philosophical outlook and assessment of biotechnology is envisaged so as to face its implications on the human being.

Philosophical trends, like dualism, materialism, determinism and nihilism have facilitated a partial approach to the human phenomenon. These lead to uncertainty and destroy the very foundations of knowledge, especially with regard to human values. In fact, the truth about the human person must be freed from every possible exploitation, reductionism and determinism, in

⁴⁵ Cfr., J. P. SARTRE, *Being and Nothingness: An Essay on Phenomenological Ontology*, trans., H. Barnes, Methuen, London 1957, 266.

⁴⁶ Cfr., T. W. REICH, “Body - Embodiment: The Phenomenological Tradition”, in R. M. ZANER, ed., *Encyclopedia of Bioethics*, vol. I, Simon & Schuster Macmillan, New York 1995, 293 - 299.

⁴⁷ Cfr., H. JONAS, “Ethics and Biogenetic Art”, 502.

⁴⁸ Cfr., H. JONAS, “Ethics and Biogenetic Art”, 503.

order to guarantee a full and scrupulous respect for the dignity of every human being from the first moment of his existence.⁴⁹

Findings of empirical and biological sciences can provide information to philosophy with regard to the understanding of the human being. Biotechnological endeavours, however, may also open up new horizons for the study of human nature and new venues may be opened for anthropology which should lead to a very comprehensive and wholistic human science, to affirm the unity of man, thus preventing the reduction of man to a commodity. As Jonas earnestly exhorts, “let us not try to play creators at the roots of our being, at the primal seat of its mystery.”⁵⁰ The Catholic Church through her document *Donum vitae* reaffirms this aspect: “By virtue of its substantial union with a spiritual soul, the human body cannot be considered as a mere complex of tissues, organs and functions, nor can it be evaluated in the same way as the body of animals; rather, it is a constitutive part of the person who manifests and expresses himself through it.”⁵¹

⁴⁹ Cfr., JOHN PAUL II, “Discourse of the Holy Father,” in *The Identity and Status of the Human Embryo: Proceedings of the Third Assembly of the Pontifical Academy for Life*, eds., J. D. Vial Correa - E. Sgreccia, Libreria Editrice Vaticana, Città del Vaticano 1999², 8.

⁵⁰ H. JONAS, “Ethics and Biogenetic Art”, 504.

⁵¹ CONGREGATION for the DOCTRINE and FAITH, *Respect for Human Life*, (The English Translation of *Donum Vitae*), Pauline Book & Media, Boston 2004, n. 1550, 543.