

Bioethics, Humanism and Post-Humanism in the Twenty-First Century: the Search for a New Human Being?

‘O, Adam! We have made you neither heavenly nor earthly, neither mortal nor immortal, so that as a free and extraordinary shaper and sculptor of yourself you will be able to forge yourself in the form that you prefer’.

Pico della Mirandola, *Oratio de hominis dignitate* [1486] 1956 (my translation)

‘Humanity will be radically changed by technology in the future. We foresee the feasibility of redesigning the human condition, including such parameters as the inevitability of ageing, limitations on human and artificial intellects, unchosen psychology, suffering, and our confinement to the planet earth’.

Transhumanist Declaration (*World Transhumanist Association*, 1988)

‘A day will come when we will have the possibility of increasing our intellectual, psychological, emotional and spiritual capacities beyond what appears possible today. We are moving out of the childhood of humanity and entering a post-human era’.

Nick Bostrom (2005)

Introduction

We began to speak about ‘transhumanism’ or ‘post-humanism’ in the epoch of ‘post-everything’! What is meant by ‘transhumanism’? Science or mere science fiction? Illusion or hope? At the beginning of our twenty-first century, thanks to the rapid and extraordinary advances in the field of techno-science, biotechnology and genomics, it is not easy to discern whether we have before us a scientific proposal that will lead to the authentic hope of being able to improve the quality of human life or whether we are faced with a utopian ideology of a technological character that seduces us and projects us into an illusory world. In essential terms, we are faced with the dream of human beings of being able to improve their lives, given that it is specifically human intelligence that is seeking to improve the human condition. But this can also conceal a dream of negation: *the death of death*. Could not this dream of earthly immortality, of ‘decreeing the death of death itself’, if it is not a mere illusion, place us in a nightmare? The questions do not stop there.

At the present time, the most curious case is that of the leader of the Transhumanist Party, Zoltan Istvan, who was a candidate at the presidential elections of 2016 in the United States of America. Istvan visited various cities in North America in his so-named ‘immortality bus’. This was a bus changed to look like a coffin, painted brown, with written on its side ‘immortality bus’. This initiative provoked amazement but certainly called the attention of the wider public to the cause of transhumanism. This candidate defined ‘transhumanism’ as ‘a radical domain of science that aims at transforming men, for lack of a better term, into gods’. In his view, our responsibility today is to transgress evolution. He has expressed himself as follows: ‘The human body is a mediocre part of our current possibilities in our material universe. Our biology severely limits us. As a species, we are far from being complete and this is unacceptable. Biology is for the beasts not for future transhumanists. Whereas many thinkers want to abolish God and transform the human being into a mere animal amongst others, the transhumanists want to abolish evolution and death and recreate new ‘gods’. For many transhumanists, the principal goal of this movement is to overcome human mortality, a goal that is held to be achievable by the year 2045’ (ISTVAN, 2016, my translation).

This initial statement demonstrates the relevance and the topicality of the ethical debate about this subject today.

One of the most urgent and fundamental questions of the contemporary bioethical debate is the anthropological question. Reference is made to the human being, this fantastic and mysterious

being who is able to achieve through his creativity and inventive intelligence wonderful and amazing things that make life more beautiful, comfortable and pleasant, also offering some solutions to the tensions and sufferings of the past. At the same time, reference is also made to the human being as a being able to project and create the saddest and most degrading situations: he generates wars, destroys works of culture, poisons the environment and compromises the future of life itself on the planet.

Faced with this paradox, which profoundly troubles us, the need arises to change our vision of what a human being is. We must have the wisdom to go down the pathway of rectitude, of human fulfilment, and, lastly, of happiness. Hence the importance of focusing in a rigorous way on what is the contemporary vision or concept of the human being, which is implemented when we are faced with numerous technical possibilities and scientific actions that can profoundly change the identity of human beings.

In this sense we may observe that almost half a century since the birth of bioethics – namely in the year 1970 and the insights of Van Rensselaer Potter (Madison, WI) and Andrew Hellegrers (Georgetown University, Washington) – the anthropological question has not yet been addressed as it should be. This is one of the fundamental concepts from which analysis about the very concept of human dignity derives.

A little more than a decade ago, Ruth Macklin, an American bioethicist, actually stated in an editorial in the *British Medical Journal* that the concept of human dignity was useless (Macklin, 2003), that it had been exploited politically, and that today it is of use only to those who have been in favour, and those who have been against, specific questions of a bioethical character. This provoked a striking international reaction by bioethicists and a flood of publications and papers by national bioethics committees, in particular in the United States of America, in order to protect the importance of this concept. Thus the concept of human dignity became a part of the bioethical debate and was seen from an anthropological point of view as the foundational starting point for discussing and analysing the principles and/or subjects of bioethics.

The transhumanist movement has forced thinkers, philosophers and bioethicists to address the anthropological question, but from a retrospective perspective. We have before us the possibility of radical changes in the nature of man that until a short time ago were absolutely inconceivable. This scenario provokes anxiety and perplexity but also, along its way, hopes of saving human beings from threats of destruction (wars, chemical and biological weapons). There has thus emerged the imperative need to develop means by which to identify and eliminate the dangers of the self-annihilation of humanity and to promote the acceptance and promotion of new opportunities for the creation of a *new humanism*.

This text takes up, broadens and in a certain sense deepens previous bioethical works of mine – one addresses what anthropology should be chosen as a basis for bioethics and the other is a discussion of transhumanism: utopia, ideology or hope? (Pessini, 2010a; 2010b). This essay has five parts. First of all, it offers a survey of the history and development of classic humanism, its values and its limits, analysed starting with the contemporary situation (I). It then outlines, starting with the origins and the characteristics of transhumanism, its foundations in the contemporary world (II). Thirdly it seeks to understand the concepts of human nature and the concepts that relate to how human beings are values (III). It then proceeds to investigate wise science and the urgent need for bioethics in a very special mission in this context (IV). Lastly, the need is felt to draw up a new humanism for the twenty-first century that will filter through by way of the importance of formation, in the outlook of Edgar Morin, in order to teach people to be, to act and to live together (V). I will end by asking what future awaits us in the face of the challenge of going beyond the ‘paradigm of technical instrumental reason’ towards the ‘paradigm of sensitive and cordial reason’.

1. Humanism: the Origins, Concepts, Values and Limits of the Classic Heritage

1.2. The rise of humanism

In the fifth century BC the Greek philosopher Protagoras defined man as the ‘measure of all things’. This point of view was seen as one of the first expressions of humanism, that is to say the philosophy that made human beings, human life and the life of humans on the earth its principal concern. Pico della Mirandola, for his part, stated that ‘human beings can be free: their potential is limitless (1956, my translation). The humanist movement flourished in Europe during the Renaissance (the sixteenth century) and the Enlightenment (the eighteenth century), but in every epoch, country and culture it has reinvented its anthropological values, trying to provide fundamental answers to the same basic questions, amongst which there is the unveiling of this mysterious creature, that is to say the search to understand what human beings are.

Humanism is an eternally new concept that has been constantly reshaped (Halimi, 2014). For Irina Bokova this is an idea, a vision and a concept of the human being (anthropology) that has been reinvented at every historical moment of human development. Many rapid changes and profound transformations completely altered the relationship between man and his environment at the beginning of the twenty-first century. The traditional model of growth is rapidly exhausting the natural resources of the earth and coming up against the biophysical limitations of the planet. This is degenerating towards an ecological crisis whose consequences are not yet completely known. We have apocalyptic predictions produced by famous scientists. We are witnessing an epochal change. Socio-economic inequalities are growing and are creating increasingly complex scenarios, while the development of emerging countries, social change and democratic transitions are provoking new hopes about the reduction of poverty and the promotion of human rights. The emergence of information technology is creating the premises for the creation of a new global space, allowing the drawing near of different cultures and people as has never happened before in history, given that they practically lived in isolation. On the other hand, this phenomenon of the encounter of cultures is generating conflicts, incomprehension and disagreements and creating the premises for tensions in many cases, leading on to violence and the deaths of innocent people (Bokova, 2014).

We have before us various simultaneous crises that affect the lives of people who live in society. This situation is inexorably testing our ability to resolve states of conflict that often end up with threats of terrorist activity. On the other hand, signs of hope also exist, with the emergence of innovative ideas and projects. We have witnessed the birth of new actors in civil society: the younger generations are creating new forms of solidarity and social action, placing faith in the unlimited resources of human intelligence. With this style, a new humanism is being generated that is more suited to our contemporary situation.

What does it mean to be a humanist today? It means adapting in a creative way the power and the values of the ancient message about what it means to be a ‘man’ to the challenges of the contemporary world. It means thinking anew about the conditions for mutual understanding in order to build peace and protect human dignity, using in the best way possible the instruments that are available for the full development of the potentiality of each person. In the fifteenth century the philosopher Giovanni Pico della Mirandola (1463-1494) defined this central concept: ‘human dignity is the power of every human being to give to himself some of that identity that he has chosen’ (1956, my translation). This effort begins with the essential process of formation and has no end given that it is infinite

The then Director General of UNESCO, Irina Bokova, in 2014 stated that ‘respect for cultural diversity is the central element of humanism in the twenty-first century. This is a fundamental constituent in these times of globalisation. No culture today has a universal monopoly. Everyone can contribute to the strengthening of our shared values’.

The Universal Declaration of Human Rights (1948), issued by the United Nations (UN), was drawn up immediately after the Second World War and is still today a text of universal relevance, even if humanity is still not able to implement a large part of the list of the rights that are enunciated in the Declaration. Half a century later the UN launched two important projects at an international level: the millennium development goals (2000-2015) and at their end the sustainable development goals (2015-2030), embracing a humanistic agenda involving all its 193 member States.

1.2. Western humanism: the values of the classic heritage

Humanism developed in the whole of Europe from the fourteenth to the eighteenth centuries. It was inspired by ancient writers whose works were translated by great scholars and began to circulate in the societies of that epoch thanks to the invention of printing: Homer (eighth-ninth centuries BC), Plato (427-347 BC) and Euripides (c. 480-406 BC) of the ancient Greeks; Caesar (100-44 BC), Cicero (106-42 BC), Sallust (86-35 BC) and Juvenal (first century AD) of the Latin classical authors. The 'ancients', as they were called, became a common source of inspiration for writers and artists.

There are figures that are linked to the development of the humanist movement. In Italy, amongst other eminent humanists, we may list Petrarch (1304-1374) and Boccaccio (1313-1375); in Holland and Germany, Erasmus of Rotterdam (1466-1536) and Johan Reuchlin (1455-1522); in France, Pico della Mirandola (1463-1494) and Jacques Lefèvre d'Étaples (1455-1536); in England, John Colet (1467-1519) and Thomas More (1478-1535); and in Spain, Juan Luis Vives (1493-1540). All of these men, together with others, made their contribution to the establishment and the fulfilment of humanism.

The message of the humanists adopted a form of basic optimism in line with the new European approaches typical of the end of the Middle Ages. This optimism was founded on trust in the fact that man was a rational creature. Rationality was the faculty that distinguished human beings from animals. Rationality was seen as the power that enabled man to know and control himself, freeing himself from the dangerous rule of the passions. Reason was seen as the universal attribute of humanity. René Descartes and John Locke thought within this lineage. The logical attribute of human rationality constituted the guide to understand, and therefore to interact in and with, the universe. Immanuel Kant (1784) became the personification of this new epoch which he defined with the phrase: 'humanity that grows in its maturity through the exercise of reason'.

Trust in man was accompanied by trust in reason and science. This period can be listed as a season of great scientific advance in all the fields of knowledge. One can cite Copernicus (1473-1543), Galileo (1564-1642), Leonardo da Vinci (1452-1519) and Isaac Newton (1642-1727), amongst others. Bold navigators and explorers ventured into mysterious and unknown oceans and discovered new continents (America, India), inventing new methods and instruments (the compass) to achieve safer and more organised navigation. Magellan (1480-1521), Vasco de Gama (1460-1524), Marco Polo (1254-1324), Christopher Columbus (1451-1506) and James Cook (1728-1779) were some of these figures. Daily life became more comfortable and appreciable thanks to discoveries and advances in the field of medicine. We may remember here the innovations of Ambroise Paré (1510-1590) and of Edward Jenner (1749-1823). In the field of agriculture new instruments and techniques were introduced which increased yields, with the creation and reproduction of animals for human consumption. Lastly, the industrial revolution began its journey. Trade on a vast scale brought to Europe the best products of other countries, creating an increasing interdependence of all the countries of the various continents of the world. There emerged during this epoch, albeit in embryonic form, what we call today the process of 'globalisation'.

With the market, the circulation of money and the development of the arts increased. Culture was accompanied by material progress. Celebrated poets such as Joachim du Bellay (1522-1560) in France; William Shakespeare (1564-1616) and Francis Bacon (1561-1626) in England; Goethe (1749-1832) in Germany, and artists such as Michelangelo (1475-1564) and Raphael (1483-1520) in Italy, were at the top of a long list of geniuses of human invention. Academies were established to support and defend the interests of artists. Exhibitions were organised to accompany the spread of interest in art, above all else for the middle and upper classes of society. The Italian city of Florence was the cradle of all of this artistic and cultural revolution.

This optimism, accompanied by widespread progress in various areas of human activity, gave rise to 'utopias'. Thomas More was one of the most famous thinkers of this lineage. James Cook (1728-1779), Louis Antoine de Bougainville (1729-1811) and Christopher Columbus were

discovering new parts of the world. Jean-Jacques Rousseau (1712-1778) and William Wordsworth (1770-1850) dreamed of idyllic communities where people could live in contact with nature, far from the crowds of the city, enjoying liberty without laws or repression. Immanuel Kant (1724-1804) spoke about a sort of universal peace, placing man on a pedestal, exalting his rational faculties and his potential for development. This humanist movement was also marked by a wish to free people from the yoke of various Churches and religion: the presence and the action of God in society began to shrink starting with this wave of secularisation. Nature was perceived as a replacement for divinity. This was the thought of Lord Shaftesbury (1801-1885), the spokesman of theology in England at that time. There took shape in this scenario of the growing secularisation of Christianity the first form of humanism, with the emerging currents of pantheism and atheism.

Despite this optimistic scenario which was widespread in the culture of the time, not everything that glittered was gold! This utopian optimism was not free from doubts given that not everyone 'worshipped reason' – the cornerstone of the whole edifice of humanist construction. David Hume (1711-1776) was the first thinker to subject the optimism of Descartes and Locke to criticism, arguing that reason could betray man, that there are as many 'reasons' as there are individuals and that the 'senses' could be a better guide. Kant confessed to be very sensitive to the scepticism of Hume given that the 'animal' component of man was in effect very strong or even stronger than the rational component. In this, he echoed the famous saying of Blaise Pascal (1623-1662): 'The heart has its reasons that reason does not know'. After Hume, instinct and sensations became the key words of the new sentimental/Romantic tendency in English literature, in particular with Samuel Richardson (1689-1761) and Laurence Sterne (1713-1768). In France, we may cite Jean-Jacques Rousseau (1712-1778), amongst others.

Another problematic aspect was the evidence of the benefits and advances attributed to human nature but which were in fact the products of the culture, gifts and conquests of civilisation, respecting the rules and laws established by the city (*polis*). Those who lived outside the rules established by the *polis*, returning to the state of nature, which is not always idyllic, would, it is said, live in a state of ongoing war, as was described by Thomas Hobbes (1651) in his *Leviathan*.

The debate between nature and culture, as a consequence, was at the centre of the Enlightenment and its vision of human life. Even at the apex of its glory, humanism was not without antagonistic currents of thought.

1.3. Humanism today: some limits of the classic humanist heritage

In the epoch of globalisation, after two world wars in less than a hundred years in the twentieth century, with the deaths of a hundred million people, optimistic and almost ingenuous trust in man has endured a hard blow and humanism has been subjected to a rigid re-examination as regards its assumptions and its message of optimism.

The humanism described above was linked to the specificity of its historical context. It was a philosophy that was the expression of a sophisticated and educated elite. Normal and ordinary people, with their daily problems connected with survival, were ignored, as they had been neglected in Athens or Rome, the cradle of the first humanism. The French Revolution (1789) highlighted the most humble classes of society and proclaimed that all human beings were equal. It spoke about freedom, equality and fraternity, striking a mortal blow at this understanding of humanism.

In addition, humanism up to that moment had been a movement that was purely Eurocentric and thus did not incorporate other elements of the civilised world. The Renaissance and the Enlightenment turned to classical antiquity as a source of inspiration. They ignored ancient cultures which already existed in other parts of the world, such as Confucianism in China or Arab civilisation with its Muslim culture. For this reason, humanism was criticised as being an instrument of European colonialism. While the European powers competed with each other to expand their areas of influence throughout the world – in Asia, in Africa and in America – this civilisation was transplanted and offered as a model to be followed in these undeveloped countries. At this point in history, the birth of imperialism took place, with social nuances and political,

cultural, religious and economic interests whose values were steadily imposed on these newly discovered or conquered countries. This also demonstrates once again that the classic vision of humanism was no longer suited to the twentieth century.

The twentieth century was seen as one of the epochs of greatest progress in terms of scientific knowledge but, unfortunately, it was also one of the bloodiest in history. The optimistic dream was rapidly transformed into a nightmare. The destructive power of science and technology obtained greater visibility and importance compared to the benefits obtained by their implementation. Amongst the other factors that contributed to this new pessimistic scenario, we may remember the creation of the atomic bomb and its use on Hiroshima and Nagasaki in 1945. Another unsolved problem was provided by the inability to manage nuclear waste in an adequate way. Accidents such as those that took place in Fukushima in Japan (2012) or before that at Chernobyl in the Ukraine (1986), with many deaths and terrible consequences for human health, raised many questions about the use of nuclear energy. In addition, the global warming that is now underway, with the consequent ecological crisis, the use of pesticides in agriculture, which threaten health, and the unforeseen consequences of eugenics, as a result of the new discoveries in genetics, without taking into consideration the ethical values involved in these challenges, are all elements that have generated disquiet and fear about the future itself of humanity upon the planet. We could even simply disappear in a future that is not so far off! People are becoming aware that if we do not change this state of things and this lifestyle, we could realistically imperil the very existence of future generations.

Illiteracy has still not been eradicated in the world. According to the data provided by UNESCO, at the present time there are about 773.5 million illiterate adults of whom about two-thirds are women. About 200 million young people between the ages of 15 and 24 did not complete their basic schooling even though instruction was one of the fundamental human rights upheld in 1948 in the famous Declaration of Human Rights. Instruction is also the key to moving out of this state of ignorance and poverty which has, amongst its more distant causes, specifically the problem of illiteracy. The distance between those who have and those who do not have is increasing rather than diminishing.

Scandalous wealth is accumulated by a small number of powerful people in the world, while famines and epidemics affect immense numbers, compromising the possibility of a healthy and dignified life and a professional future for thousands of people throughout the world. Now, ironically enough, we are going through a deep economic crisis that not only threatens the lives of poor people but also the real development of industrialised countries. Globalisation runs the risk of making the poor poorer and the rich richer. As a consequence, we are witnessing not the globalisation of solidarity but the globalisation of exclusion and indifference, as Pope Francis has repeatedly and emphatically highlighted, in the face of the situation of migrants and refugees in Europe.

The new communications technology allows the exchange of information and interaction that are almost instantaneous with all the parts of the world. Today we are living in an authentic *global village*, as Marshall McLuhan (1911-1980) was already positing in 1960. The new forms of communication are without doubt a valuable instrument of freedom, one of the great benefits produced by technological advance. However, these technologies are also used as an instrument to control and spy on near and distant enemies. The frequent scandals of corruption that involve public figures throughout the world are famous. During our epoch of universal communication, how many solitary people sit down in isolation in front of the monitors of their computers looking for a contact with a distant and unknown person in order to counter their loneliness? So-called diseases of the soul have emerged during the twenty-first century: loneliness, depression and a consequent increase in suicides. Today, every forty seconds one person commits suicide in the world, producing 800,000 suicides every year.

Violence is one of the most evident consequences of all these frustrations. Aggressiveness within society, intolerance, social conflicts and the use of children as soldiers or kamikaze combatants in various regional conflicts in the world are on the increase. Schools are no longer a

‘sanctuary’ where peace is experienced and taught – they, too, unfortunately, reflect the conflicts and the social inequalities of the societies in which they operate.

Politicians are even more worrying: they seem no longer to be able to control or solve these difficulties. The international organisations created to keep the peace amongst nations (the UN, UNESCO, FAO) have become powerless in the face of devastating waves of violence and terrorism perpetrated by fundamentalist organisations with a religious background or otherwise.

The victims of desperation, some people have turned to religion, looking for support, but with the paradoxical risk of nourishing new and old forms of fundamentalism – extremist forms of religions that exist in all faiths. Even though such a situation cannot be generalised, there are also some positive signals that indicate – as an urgent challenge – that there is a need to reinvent humanism. Whatever the case, all of this state of things demonstrates to us how much we are still distant from the dream of universal peace cultivated by the humanists of the Enlightenment!

2. The Emergence of Contemporary Transhumanism

2.1. Some notes on the origins and characteristics of post-humanism

The terms ‘transhumanism’ and ‘post-humanism’ have been coined recently, even if the ideas that underlie them are older this. The philosophical ideas that form the basis of this movement of thought have their origins in the century of the Enlightenment thinkers and have imbibed a dose of post-modern relativism. From the Enlightenment comes a completely reductive approach to the characteristics of human life, starting with the movement of materialist empiricism. In his book *L'homme Machine* of 1748, the French physician and philosopher Julien Offray de La Mettrie (1709-1751) wrote that men ‘fundamentally are animals and machines’ (1912, p. 143, my translation). The Marquis de Condorcet (1743-1794), another French philosopher of the Enlightenment, wrote that ‘there are no pre-established limits to the improvement of the faculties...the perfection of man is without limits’ (Condorcet, 1795, my translation).

These insights of the eighteenth century were updated by the transhumanist Bart Kosko in his work *The Fuzzy Future* (1999) in which he proclaimed that ‘biology is not fate, it is only a first hurried and clumsy attempt by nature to create computers made of flesh. Integrated circuits, instead, are fate’ (Kosko 1999, my translation). One should also consider the declaration of Kevin Warwick (2000, my translation): ‘I was born a human but this was an accident of fate, a condition connected only to time and space. I believe that this is something that we have the power to change’. This post-humanist vision is the consequence of Enlightenment ideas animated by a ferocious libertarianism and supported by a post-modern moral scepticism according to which every person is the final arbiter of what is right and appropriate for his life or his body. Many scholars in this field have seen seeds of post-humanist ideas in the thought of the nineteenth-century German philosopher Friedrich Nietzsche, as expressed in his book *Thus Spoke Zarathustra*, in which, when presenting his superman, he states that ‘man is something that must be overcome’ (Nietzsche 1995, my translation)

Richard Jastrow in his book *The Enchanted Loom* (1981), when speculating upon this future, describes a new human scenario: ‘At least a human brain inserted into a computer has been freed from the weakness of its physical-biological nature. It now has full control over its destiny...A guest in an indestructible prosthesis of silicon, it is no longer limited to a few years of life; this life could be for ever’ (Jastrow 1981, pp. 166-167, my translation).

Transhumanism has been defined as ‘The intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities’ (Humanity+, 2013).

Dr. José Alberto Mainetti, an Argentinian medical doctor and bioethicist – one of the pioneers of bioethics in the Latin American context – defines transhumanism or post-humanism as a ‘techno-futuristic movement between the utopian and the ideological which postulates the self-

transformation of the human species, because the perfecting of humans constitutes a new objective of medicine, beyond the traditional treatment of illness and health care' (Mainetti, 2014, p. 33, my translation).

The *World Transhumanist Association* was founded in 1998 by Nick Bostrom and David Pearce (a British utilitarian thinker) to provide a general organisational basis for all transhumanist groups. Today it has more than three thousand members in over a hundred countries. It has published since 2004 the *Journal of Evolution and Technology* which at the outset was entitled the *Journal of Transhumanism*. In 2008 this association renamed the publication and gave it the name *Humanity+*. One of its explanatory documents, in which some of the fundamental and shared principles of transhumanism are declared, is the *Declaration of Transhumanism* which I will now reproduce in its entirety:

'(1) Humanity will be radically changed by technology in the future. We foresee the feasibility of redesigning the human condition, including such parameters as the inevitability of ageing, limitations on human and artificial intellects, unchosen psychology, suffering, and our confinement to the planet earth.

(2) Systematic research should be put into understanding these coming developments and their long-term consequences.

(3) Transhumanists think that by being generally open and embracing of new technology we have a better chance of turning it to our advantage than if we try to ban or prohibit it.

(4) Transhumanists advocate the moral right for those who so wish to use technology to extend their mental and physical capacities and to improve their control over their own lives. We seek personal growth beyond our current biological limitations.

(5) In planning for the future, it is mandatory to take into account the prospect of dramatic technological progress. It would be tragic if the potential benefits failed to materialize because of ill-motivated technophobia and unnecessary prohibitions. On the other hand, it would also be tragic if intelligent life went extinct because of some disaster or war involving advanced technologies.

(6) We need to create forums where people can rationally debate what needs to be done, and a social order where responsible decisions can be implemented.

(7) Transhumanism advocates the well-being of all sentience (whether in artificial intellects, humans, non-human animals, or possible extraterrestrial species) and encompasses many principles of modern secular humanism. Transhumanism does not support any particular party, politician or political platform' (Bostrom, 2005, p. 26).

Transhumanism is a form/style of thinking about the future based upon the assumption that the human species in its current form does not represent the end of our development but is at a still very incipient stage of its evolution. The leading figures of this movement formally define it in the following way:

'(1) The intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities.

(2) The study of the ramifications, promises, and potential dangers of technologies that will enable us to overcome fundamental human limitations, and the related study of the ethical matters involved in developing and using such technologies' (Bostrom, 2005, p. 8).

In the view of its leading figures, post-humanism recognises certain principles and values of modern humanism. It seeks to promote rationality, freedom, tolerance, democracy and solidarity. At the centre of post-humanist values there is the autonomy of the person who is free to modify his own body. This right includes the fundamental freedom of procreation. However, the refusal of improvement is also a right. The human biological form must not be sacred. This means that it is not immutable and as such the value of, respect for, and dignity of, man is not limited to his biological dimension.

N. Katherine Hayles in her book *How we Became Post-human* (1999) describes four characteristics of post-humanism. 1. Models of information are more important or essential than the

nature of being. Acquiring a biological sub-stratum is seen more as a historical accident than the acquisition of an inevitable destiny of life. 2. Consciousness is an epiphenomenon. An immaterial soul does not exist. 3. The body is simply a prosthesis, the first that a person learns to use and to manipulate. As a consequence, to replace or improve a human function with another prosthesis is only a natural extension of a human being in his relationship with the body that he has received. In this scenario a human being is organised and is connected like machines. In this new post-human reality there are no absolute differences or demarcations between corporal existence and computer simulations, a cybernetic mechanism and a biological organism, robotic teleology and human objectives (Hayles, 2014, p. 3098).

The instruments that post-humanists would use to achieve their objectives include genetic engineering, nanotechnology, cybernetics, pharmacological research and computer simulations. One of the most ambitious and controversial humanist approaches relates to the concept of 'mind uploading'. In the view of its supporters, the extraordinary advances in the context of computer science, calculation and neuro-technologies over the last few decades will enable people to read all the synaptic connections of the human brain, enabling us to create an exact replica of the brain that would begin to exist and function within a computer. This simulator could live in any form that is desired of a mechanical body (Kurzweil, 1999; 2005; 2012).

When one speaks about convergent technologies to improve human performance, we encounter four types of new technologies: nanotechnologies, biotechnologies, information technologies and the cognitive sciences (*nano-bio-info-cogno*), according to the North American approach. In addition to these four convergent technologies, the European project adopts the approach of broadening the circles of convergence, integrating the human and humanistic sciences, such as philosophy, etc. The shared goal is not the optimisation and the improvement of the existence of human beings with the help of purely material, physical and biological technologies but, rather, the development of a knowledge society that respects certain ethical, social, philosophical and religious values.

The slogan that captures this European approach, compared to that of the United States of America, is 'no to engineering of the mind and the body', 'yes to engineering for the mind and for the body'. Only this second approach respects our humanity.

The improvement of humans with the help of material technologies has to take into account certain values provided by the cultures and the histories of peoples. A reference to values such as dignity, integrity, freedom, equality and justice is of fundamental importance. These are universal values stewarded by the European cultural tradition.

We are entering the era of so-called 'digital humanism' which is understood as the result of a totally new convergence between the complex cultural heritage and technology, and which has become a new space for sociality that is without precedents in human history. This convergence is new because it allows us to redistribute concepts and objects as well as the practices associated with them in a virtual context.

Digital humanism is connected with discoveries that have opened up new fields of research and produced new technologies that are transforming consolidated socio-cultural categories. In addition to its technical and economic aspects, which require constant control and questioning, digital humanism is near to becoming a culture given that is helping to change our perception of objects, relationships and values, introducing new prospects in the field of human activity.

Cultural practices, such as writing, reading or communication, for example, have been modified by the widespread use of digital technologies that can also perform an important role in a radical change of the categories of space and time, facilitating encounter between cultures, breaking down geographical distances, making communication instantaneous and interactive, etc. (Skype, video conference).

The hybrid space of digital technology is a new way of living with myths, discoveries and utopias. It makes the global village a reality. Digital humanism is a way of thinking about this new reality.

2.2. The debate between transhumanists and bio-conservatives: some leading figures and their proposals

Since the beginning of the year 2000, the transhumanist movement has gained visibility and begun to provoke concerns in the fields of bioethics and bio-politics. In this new context, the leading figures of so-termed 'bio-conservatism' have come onto the stage, with ethical and philosophical positions that are seen as conservative, to defend the current state of human nature. We may list here Leon Kass, Michael Sandel, Francis Fukuyama and Jürgen Habermas, amongst others.

Francis Fukuyama, one of the members of the Commission for Bioethics of the President of the United States of America at the time of the presidency of J.W. Bush, and the author of the book *Our Posthuman Future: Consequences of the Biotechnology Revolution*, declared that 'transhumanism is the worst idea in the world' (Fukuyama, 2002). Leon Kass, who was chairman of the Council for Bioethics of President Bush, belongs to the same line of thought of three eminent thinkers who are seen as bio-conservatives: Paul Ramsey (a Protestant theologian), C.S. Lewis (a Christian apologist), and Hans Jonas, a pupil of Heidegger, the philosopher and theologian born in Germany.

The concern of L. Kass concentrates upon human dignity and the sophisticated attempts specific to technological intervention upon human nature that can dehumanise us, imperilling many traditional meanings, such as the life cycle, sexuality, alimentation, work and other important elements of human existence. This thinker is known for his defence of the *wisdom of repugnance* which is linked to the *heuristics of fear* of Hans Jonas. Although he affirms that a deep sense of disgust does not constitute a valid moral argument, he nonetheless emphasises the fact that this kind of feeling (*factor of repulsion, of disgust*) deserves attention and respect. He expresses himself as follows:

'In crucial cases, however, disgust is an emotional expression of profound wisdom, beyond the power of reason to offer a complete explanation...we intuit and perceive, immediately and without discussing, the violation of things and values that we correctly hold to be important and meaningful...to pollution and perversion, [for example] the most adequate response can only be given by horror and disgust; and, in the same way, horror and disgust are the 'prima facie' evidence of stupidity and violence' (KASS 1997, p. 20, my translation).

The bioethicists George Annas, Lori Andrews and Rosario Isasi have proposed legislation in which all the genetic changes produced in human beings must be considered on a par with a crime against humanity, like, for example, the practices of torture and genocide. The argument is similar to that made by Fukuyama:

'The new or 'post-human' species very probably will look at the old 'normal' human beings and will see them as inferior, savage and suited to slavery or elimination. The normal, on the other hand, will be able to perceive post-humans as a threat and if they can they will engage in a battle to kill post-humans before they themselves are killed or reduced to slavery by them. It is this possibility of genocide that makes experiments for the alteration of the species potential weapons of mass destruction and makes genetic engineering a terrorist potential' (Annas; Andrews, ISASI 2002, p. 162, my translation).

We may list amongst the neo-prophets of a post-human world the so-termed post-humanists or transhumanists Raymond Kurzweil (USA), Nick Bostrom (Sweden), Max More (United Kingdom), John Harris (England), Julian Savulescu (Australia), Eric Drexler (USA), Eliezer Yudowsky (USA), amongst others.

Bio-conservatives and transhumanists have various elements in common. Both agree on the fact that we are faced at this specific historical moment with the concrete possibility that technology may be used to transform radically the human condition. They also agree on the fact that this technological fact requires and imposes an obligation on the current generation to think seriously about the practical and ethical implications of such a use. Both are worried about the health-care risks and the side effects, but the bio-conservatives are more concerned about the success than the

failure of such a technological potentiality. Both these outlooks agree that technology in general, and medicine in particular, have the legitimate task of research and development, even though the bio-conservatives tend to oppose a use of medicine that goes beyond improvement therapy. Both these parties condemn racism and forced eugenic programmes sponsored by States themselves.

‘Bio-conservatives pay great attention to the possibility that human values will be thrown away surreptitiously by technological advances and perhaps transhumanists should learn to be more sensitive to these concerns. On the other hand, transhumanists emphasise the enormous potential of an authentic improvement in human wellbeing that is obtained only through technological transformation; bio-conservatives could try to be more disposed to appreciating the possibility of achieving great values on the journey that ventures beyond hitherto recognised biological limits’ (Bostrum 2005, p. 25, my translation).

2.3. The ancient and eternal human desire to seek self-enhancement

Many people dream of flying and wish to fly without the help of technology; they dream of being able to have bodies and minds that transcend current biological limitations; and they wish not to have to go through the painful process of ageing or dying. In the meanwhile, they continue to live their lives, seeking to learn to coexist with the realities of finitude and mortality. Already today we have the means to help us to address the biological limitations of our existence in a significant way.

However, there will soon be technologies that will enable people to overcome these limitations. This is the post-humanist agenda that pulls with it a series of ethical questions about this scenario. For many people this is only a daydream. Post-humanists, on the other hand, believe in this possibility and strive to look for, and create, new technologies by which to prolong human longevity and to support some forms of physical immortality and the regeneration of the human body by expanding its functional capacities. Trans-humanism may be defined as a philosophical vision that responds positively to these questions while awaiting the day when *Homo sapiens* will be replaced by a biologically and technologically superior being. There are those who ask if this well planned post-human being will still be human after being so profoundly changed. Would such a being still be a representative of the human species? (Hook, 2014).

The human desire to acquire new abilities and skills is as old as the human species itself. Transhumanists seek in ancient testimonies, in the great epic poems of classical antiquity, inspiration for their post-modern ideas. They turn to the Sumerian epopee of Gilgamesh (c. 1,700 BC), a king in search of immortality who discovers a plant that grows at the bottom of the sea. He successfully collects it but a serpent steals it from him before he can eat it. Since then, various explorers have looked for the font of youth; alchemists sought to produce an elixir of long life; and various schools of Taoist esotericism in China explored physical immortality and tried to dominate the forces of nature. The boundaries between mythology and science, magic and technology, were not defined in a clear way and almost all the means pursued for the preservation of life turned out to be a waste of time.

The attempts and the research to transcend our natural limits were perceived in an ambivalent way. On the one hand, there was attraction and, on the other, arrogance, that is to say excessive ambition (*hubris*), which meant that the discovery worked against humanity itself. The myths of ancient Greece demonstrate this ambivalence with clarity. Prometheus stole the fire of Zeus and gave it to men, improving the human condition in a permanent way. As a consequence, he was severely punished by Zeus. In the myth of Daedalus the gods are repeatedly challenged, and successfully, by the intelligent and creative planning of men who do not use magical means to extend their human capacities. However in the end tragedy occurs. Icarus, the son of Daedalus, ignoring the warnings of his father, flies too high to the sun, causing the wax of his wings to melt.

In the Middle Ages, as well, contrasting opinions existed about the research of alchemists and their attempts to transform substances, to create a homunculus in a test tube, and to invent panaceas. Some ‘scholastic’ scholars followed the teachings opposed to experimentation of Thomas

Aquinas in the belief that alchemy was a dangerous activity connected with daemonic forces. Other theologians, such as Albertus Magnus, defended this practice (Newman, 2004).

With the end of the Renaissance, human beings and the natural world once again became a subject for study. Renaissance humanism encouraged people to trust their own observations and their own prejudices before entrusting this task to the religious authorities. This kind of humanism also sustained and cultivated the idea of a person who was highly developed at a scientific, moral, cultural and spiritual level.

The summit of this progression was the work of Giovanni Pico della Mirandola, *Oration on the Dignity of Man* (1486), in which he affirmed that man does not have any pre-established form and that he alone is responsible for perfecting himself:

‘I have made you neither heavenly nor earthly, neither mortal nor immortal, so that a free and extraordinary shaper and sculptor of yourself, you will be able to forge yourself in the form that you prefer. You can degenerate yourself into lower things that are ugly; you can regenerate yourself, according to your will, into higher things that are divine’ (Pico della Mirandola, 1956, my translation).

Transhumanist ideas spread during the first part of the twentieth century. The term ‘transhumanism’ was coined in 1927 by Julian Huxley, an eminent scientist, biologist and first Director General of UNESCO, as well as the brother of Aldous Huxley, the author of the famous work of science fiction, *Brave New World*. Julian Huxley declared the following in his work *Religion without Revelation* (1927):

‘The human species can, if it wants, transcend itself, and not only sporadically – an individual here in one way and an individual there in another – but in its totality, as humanity. We need a name for this new creed. Perhaps the term ‘transhumanism’ will be useful: man continues to be man but transcends himself, in order to discover new possibilities for his human nature’ (Huxley, 1927, my translation).

In 1928 F.M. Esfandiary (known as FM-2030), in his work *Are you Transhuman?*, referred to a human being as a being in a state of transition towards being a person for whom, in virtue of the intervention of technology, cultural values and lifestyle are only an evolutionary link with the future in an epoch of post-humanity.

2.4. Ethical discussions about contemporary humanism

Transhumanism has gained visibility in recent years following the publication of various American and European documents (papers). In the United States of America a report was published in 2002 on ‘Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology and Cognitive Science’.

In Europe in 2004 the document ‘Convergent Technologies for the European Knowledge Society’ was published. With a different and contrasting timetable compared to developments in the United States, this European document emphasised the need to cultivate and broaden knowledge about these questions in order to improve the natural and artificial environment. Material technologies should be applied to material domains; the human body and brain do not belong to these categories. This document opposed the transhumanist programme and also referred to the alarm launched in the United States of America about transhumanist ambitions to ‘improve human performances’.

In 2009 the European Parliament published its *Report on Human Enhancement* which offered many examples that referred to the improvement of human performances, from the most banal to the most speculative: the use of Viagra, doping in sport, gene therapy, anti-ageing treatment, man-machine hybrids, brain implants and cyborgs. This study describes in detail the transhumanist tendency, supports the valuing of humans and ends by affirming that transhumanism should be taken seriously: ‘The attempts to ignore or ridicule transhumanists as though it were an insignificant techno-cult...have failed. Even if many transhumanists have a heroic vision of science

fiction, they have won space in the ethical and political debate about human enhancement and have obtained global attention in many academic and media circles' (2009, my translation).

Hottois, a Belgian bioethicist, has adopted a constructive approach to transhumanism. He thinks that 'the movement deserves our attention and consideration because it provides the possibility of organising in a coherent way a vast gamut of subjects and ideas at an anthropological, epistemological, ethical, political and also ontological level to be broadly found in the context of bioethical debates' (Hottois, 2014, pp. 212-213, my translation).

The overwhelming majority of transhumanists are agnostics or atheists and secular and free thinkers. Their declared values and intentions are very near to modern secular humanism. Transhumanism is an optimistic faith that is proactive and rationalistic about the future, supported by a notable creativity and human responsibility. A transhumanist rejects fanaticism, intolerance superstition and dogmatism. He steers away from traditional and modern humanism, relativising the value recognised exclusively as belonging to a human being, an individual member of a biological species. He condemns human speciesism. In his view, the biological human form is not sacred, it is not immutable and it does not have a monopoly of dignity. Transhumanists prefer the concept of 'person' because of the presence of certain attributes such as awareness, sensibility and the capacity to reason and to choose. The emphasis placed on the concept of 'person' also allows a denunciation of the impact of sentences and discrimination associated with differences relating to race or ethnic group, sex or gender. One of the criticisms that modern humanists receive relates to accentuating the category of *white, western and male*. Transhumanism proposes to eliminate these prejudices of classic and modern humanism.

At the centre of transhumanist values is placed the autonomy of the person who is free to change his body and his particular and contingent morphology. This fundamental right is connected with the autonomy of parents and their freedom in procreative choices. Transhumanism, therefore, emerges as a form of humanism without any *a priori* limits.

The twentieth century has been seen as the moment of the collapse of the great narrations (materialist Marxism, socialism, unbridled capitalism and now also the great narration of globalisation) which have given meaning to history. Transhumanism proposes a new narration, one that is more open, to be written with a rich speculative imagination and the capacity to integrate the advances of scientific technology. A history without religious or secular eschatology, a history whose final cannot be foreseen and which brings with it unlimited expectations that are full of hope.

The great post-humanist narrative begins by looking at the past, to cosmic and biological evolution, and continues by observing human evolution from the point of view of technology. It concentrates on the idea of enhancement, breaking the grip of the therapeutic paradigm that is typical of biomedical innovation and action. Modern and traditional humanism usually remains a prisoner of the therapeutic paradigm and the prejudices correlated with it, amongst which the idea of the immutability of human nature, fundamentally privileging the Western, white and male individual (male power). The focal lens of transhumanism shows that the previous forms of humanism were reductionist and somewhat overly exclusive. Significant portions of humanity were simply insignificant even though they existed (Asians, blacks, women, etc.).

Evolutionism will not cease to be a *potentially dangerous* paradigm given that it can be interpreted and applied in a simplistic and superficial, or brutal, way, and open the way to an inhuman world of barbarity. Transhumanism involves notable risks as regards equality, justice and solidarity, in a society of performances dominated by the logic of the market.

Before engaging in a critical assessment of this movement, it is important to analyse the concept of human nature that underlies every scientific and ethical discussion of the transhumanist movement.

3. Two Fundamental Concepts: Human Nature and Human Enhancement

3.1. How should we understand the *concept* of human nature?

What do we mean by 'human nature'? We should make three distinctions in relation to this concept: 1. *Human nature 'strictu sensu'* (human biology); 2. *Human essence*; 3. *the human condition* (Mainetti, 2014).

The first concept of 'natural' exists in opposition to the category of 'artificial'. To respect human nature is said to involve a set of intrinsic characteristics that we possess, without any intervention on our part, differently to what takes place with cultural products which, instead, are the result of human activity. In this approach, human nature means the *human biological body*.

Another way of comprehending human nature is to understand it as *human essence*. In the history of philosophy we have numerous definitions of what a human being is based upon his properties and exclusive prerogatives which distinguish him as a creature that is unique among all other living creatures. Thus we have the classic idea of man as a *rational animal*. This idea can be extended to two other important categories of Western culture: man *imago Dei* and *Homo sapiens*, with his anthropic characteristics and capacities, such as language, knowledge, passions, feelings, moral behaviour and other unique attributes. The set of these qualities, amongst which somatic qualities only just appear, David Hume called 'human nature' in his *Treatise of Human Nature* (1738).

This is another concept of human nature which, in order to avoid conceptual confusion, we may call, following in the footsteps of Kurt Bayertz, 'human essence'. This *novum hominis*, in his nature which we can describe as reason, intelligence or spirit, converts a highly defective biological animal into a cultural animal that can be enhanced, a creator and creature of culture, a being that is artificial by its nature. Starting with modernity, when the idea of the cosmos was abandoned, that is to say the picture of the world as an ordered and hierarchical organisation in which all beings, including man, have their place, there was an accentuation of awareness of the plasticity and freedom of man. The new cosmology was projected as a new anthropology of human dignity founded upon the individual self-creation of a *new human being*. This was the anthropological manifesto of Pico della Mirandola (1956), to which I referred above, before the birth of classic humanism. For Rousseau, what defined humanity was its capacity for improvement/enhancement, its ability to be free from natural limitations ('the nature of man is no longer natural'). Kant introduced autonomy as the foundation of ethics. Nietzsche saw the human being as an animal that is not pre-determined/static but, rather, in evolution towards being a superman. Sartre radicalised this with his existentialist humanism and his statement that 'existence precedes essence; human nature does not exist given that there is no God by which it can be understood'.

Lastly, the third concept relating to human nature can be explained by understanding the *human condition*. This is said to be a radical experience of life, understood in fundamental terms in the finitude which takes place between birth and death: the embodied human condition. The human condition is neither biological nature nor essence because it changes its characteristics on the basis of its natural and cultural becoming: in this way, as well, man ceases to be man. The human condition is an empirical and transcendental category and at the same time encounters difficulties in remaining an *a priori*. Birth and death are not only limitations – they constitute the very identity of the human being who is understood as a mortal and finite being. Although he is aware of his finitude, his thoughts and his actions aspire to the infinite and to immortality because this is a part of man that denies his very condition as a man by transcending it. He contributes to the denial of his essence even when it is affirmed that man is nothing else but 'what he makes himself', as existentialist philosophy postulates.

Bioethics was born as an epistemological epiphenomenon when the technological-scientific revolution intervened upon cosmic nature (the ecological crisis). The anthro-plastic revolution found its Pygmalion, the new Prometheus, who began the era of *bios* and addressed the technological transformation of the human body. We are here face to face with a new reality as regards new forms of birth, procreation and death – these would become fundamental questions of bioethics, defining the *bioethical complex* of Pygmalion, Narcissus and Knock in post-modern culture, characterised, respectively, as 'anthro-plastic', 'auto-scopic' and 'auto-phagic' (Mainetti, 2014).

In our days, the initial scenario of control over nature was dramatically renewed when the technological possibilities of modifying life seemed to fulfil the eternal dream – flight from the human condition itself. In its most radical form, post-humanism postulates a techno-futurism with a cyber-culture that liberates man from his embodied condition, reaffirming the anthropological dualism of gnostic relation in our culture – every human body, understood as form, does not have imperfections but, understood as matter, is a disaster. Flesh is not matter but a malediction, says the leading character of the novel by Max Frisch, *Homo Faber*. It is a burdensome and cruel deception: nature grasps a wonderful creation, the human brain, and imprisons it in a structure that has a short, weak, inefficient and frail life – the human body. Our bodies can be beautiful but they can also be unsustainably ephemeral.

The post-humanist condition is the pole of attraction of convergent NBIC (nano-bio-info-cogno) technologies that seek to value and concretise the demi-god or re-creational condition of man. Bioethics has to react to this unusual chapter of denial of human nature and ask itself about its *moral status* and the extent of its *normativity*, in the same way as the ecological crisis has led to a reconsideration of the inherent value of cosmic nature that was abandoned by modernity. Nature has ended up by being excluded as a source of *moral status*. In this context, the ‘limit’ situations of life, such as suffering, ageing and death, cease to be mysteries to be unveiled and become mere technical problems to be overcome.

The appeal to human nature in the current context of anthro-plastic techno-science presupposes a fixed and immutable essence in man, from which come immutable universal values. The greater the normative strength of human nature, the greater the limitations imposed on human self-determination, creativity and freedom.

Bioethics must find a balanced position of thought in this complex and intricate debate about humanism and post-humanism, treatment and human enhancement. We went through five technical and scientific revolutions during the twentieth century: atomic physics, the space race, biotechnologies, cybernetics, and now the nanotechnologies, which, indeed, have been undergoing a full development (Mainetti, 2014).

A *moral revolution* is absent. In this sense, the emergence of bioethics can be understood as a sign of hope on the horizon of the search for meaning, critical thought and moral discernment, amidst very many innovations that promise a complete transformation of human beings and the offering of a *new human being*.

3.2. An itinerary open to the reality of the *moral enhancing* of human beings?

Post-humanists, who are the supporters of human enhancement, cultivate a vision of the world in which people will be more intelligent and beautiful and will live longer. The opponents of this project raise questions that point to the emergence of moral inequalities caused by these interventions upon human potential.

Reference is also made to moral enhancement, a concept that has in itself a certain appeal but which cannot be seen as a panacea. Those who are passionately committed to this approach argue that moral improvement would allow future generations to overcome the problems of the evolutionary process of our species. Our limited rationality and empathy, diffidence and selfishness, in this context should be seen as weak points.

If our morality had a biological basis, and if we had the techniques or technological means to achieve enhancement, an initial appeal to moral improvement would be obvious. This can generate – as a result – less selfish and less aggressive people, human beings who are more sensitive, more supportive and more interested in addressing the problems of global poverty and the effects of climate change. The idea that politicians, public figures, businessmen and judges can receive moral improvement is still a dream. If the interface between the brain and the computer, pills or genetic alterations, were available in order to assure that those who have public responsibilities had ethical conduct, impeding them from giving way to corruption, this would be an

enormous advantage for the whole of humanity, without doubt, but this is not as simple as it initially appears.

The idea of being planned or pharmacologically manipulated to do what is right to wrong is unpleasant. The idea of assuring that the species as a whole is less aggressive and selfish is very seductive and attractive. However, at least challenges or questions linked to moral enhancement emerge: a). there will be disagreements about who can have access or otherwise to moral enhancement. b). What reasons can be produced to induce people to opt for moral improvement? c). the practical difficulties, such as changes in the neurophysiological processes that are responsible for moral behaviour or the development of techniques that allow access to these manipulations according to safety procedures, or agreement on the moral ends that should be promoted or to convince people to such improvements, demonstrate that this project exists in the still very distant future and cannot become reality despite the great attraction that we feel for the idea of offering the possibility of having people who are really honest, supportive and cooperative, and active in the promotion of peace. Before it was religion that made – and still makes – the proposal of the conversion or the change and transformation of a human being through faith in a higher divinity. In this sense, moral improvement as proposed by some transhumanists, it is said, would be achieved by chemical, biological or genetic processes managed by biotechnologies whose consequences cannot even be imagined (O'Brolcháin; Gordijn, 2014, p. 667, my translation).

Luc Ferry, an eminent philosopher and the former French Minister of Education, states in his recent book *La révolution transhumaniste: comment la technomédecine et l'uberisation du monde vont bouleverser nos vies* (2016) that our vision of medicine will change. Hitherto, medical action has aimed above all else at healing. Illness and the treatment provided by medical action have always existed. However, we are entering a new era of medicine that will attempt to improve human beings. We will try to increase intelligence and improve emotions, sensitivity, strength and longevity.

At the base of humanism there is a project to try to resolve the majority of global problems through fraternity. The concern here is to improve the human species: not only the health of human beings but also their intelligence and fraternity. Technology will change our lives over the next thirty years in a more radical way than has been done over the last 30,000 years.

Ferry speaks about the *ubérisation* of the world, referring here to the name of the 'Uber' company which provides private transport services to passengers through simple applications. In his view, one is dealing with the emergence of an economy of collaboration where everybody can offer what they have in terms of services and no longer through the obstructive and expensive bureaucracies of large commercial companies. This economy will arise thanks to the development of internet.

As a consequence, for this French thinker transhumanism and the 'uberisation' of society go hand in hand. They constitute the offer of new opportunities – with the decline of moral, technological and social barriers, the deregulation that will lead to a 'commercialisation' of the world in which everything, including private goods, will be seen as commodities. Given this scenario, what is the solution? Should we prohibit this or agree to it? In the view of Ferry, the solution is provided by regulation, that is to say the institution of public policies in relation to regulation itself (Ferry, 2016).

4. The Search for Wise Science and the Urgent Need for Bioethics

Techno-science, a phrase coined by the Belgian philosopher Gilbert Hottois as a term for the knowledge of science and technology, exercises real power over the world and in particular over our biological being. The synergy between techno-science and humanism seeks a use of science for the good of humanity. We often forget that the use of science for the good of humanity is as ancient a project as science itself. However, the way in which today we use science provokes concerns and questions about its meaning, responsibility, and the human values that are involved. Some

bioethicists, amongst whom is the Spaniard Diego Garcia, have for some time argued that the ethics of the twenty-first century will be the ethics of responsibility.

Let us examine here the case of transhumanism which concentrates on improvements of the individual side rather than the social side. It is directed towards the future and is based upon new technologies, as well as upon technologies described in works of science fiction. Its final goal is to overcome human biological limitations and achieve the immortality long aimed at through technoscience. Whereas the origins of transhumanism can be located in the period following the Second World War (1945), with the emergence of cybernetics, nanotechnologies and genetic engineering its essence was connected with the old world of alchemy which sought to create the philosopher's stone with a view to achieving immortality. Transhumanism, from this point of view, is a movement or a school of thought that rejects acceptance of the traditional limitations of our human condition, such as illness, suffering and the brevity of existence.

Science and technology, without doubt, solve many human problems but in doing this at times they end up by creating others which are even more complex. Today, and this will be even more the case in the future, we need science and humanism, science and human values. Science and ethics are called to proceed hand in hand like two sides of the same coin. Humanity must learn some lessons from the errors committed by the scientism without ethics of the past in order to prevent them being repeated. Not to commit errors with the possibilities provided by science offers us the ultimate meaning of things and life. Science cannot tell us what we should be, and even less what it means to be better beings, because this task does not belong to the domain of its objectives. To answer questions about the meaning and the purpose of life, the beginning and the end of life, like looking for a reason for why things exist, belongs to the tasks of the unending research of philosophy and ethics. Science will never stop being a human creation, taking on the meaning and the objectives that each generation attributes to it. Thus responsibility and ethical behaviour must be placed at the centre of the discussions and the decisions of the transhumanist movement which promises the salvation of the normal humanity of today through the 'creation of a new human being, always young and immortal' in order to illumine the ethical decisions that should be made (Meyer, 2011, p. 38, my translation).

4.1. Bioethics comes onto the stage with a difficult mission

In today's world there are no longer isolated discoveries. We are witnessing an authentic *biological revolution*. In a few decades scientists have been able to decode the chemical basis of inheritance, the genetic code shared by all living beings, and to establish the bases of molecular biology and new genetics. This new knowledge has opened up the prospect of the management and exchange of genes between members of a species or between different species. Humanity is now able to manipulate and modify genetic information and even to modify the biological nature of a particular species. This enormous potential generates fear, disquiet and amazement and points to the need to take up the pathway of ethics.

The advances of the life sciences interfere with the concept of the human being and raise questions of an ethical, social and juridical character that transcend science itself. Here bioethics has come onto the stage and bioethics has tried to establish a balance between progress in the life and health sciences and respect for human dignity and human life. Its principal mission is to recognise the benefits of scientific discoveries and achievements for humanity and at the same time to be constantly vigilant about the risks and the dangers that can emerge. Even if this progress can eliminate the incurable illnesses that have afflicted humanity for some time, and improve human health and the quality of life, questions also have to be posed about unwanted effects and unethical practices, amongst which are genetic manipulation and its various applications, with a return of eugenic ideas, give that it has available today sophisticated instruments or experiments on vulnerable populations.

The emergence of bioethics coincided with a global reaction against the horrors committed by Nazi doctors during the Second World War. This reaction culminated in the drawing up of the

Universal Declaration of Human Rights (1948). The ultimate goal of bioethics is based upon this humanistic principle in order to uphold the primacy of the human person and support his dignity and freedom – which are inherent in the human condition – in the face of the constant risk of becoming a guinea pig for sophisticated clinical studies which at times are a threat to the life itself of the subject.

The alliance between bioethics and human rights proclaims a new form of humanism that is in line with the expectations and the scientific and ethical challenges of our time. An example of this is the Universal Declaration on Bioethics and Human Rights adopted by UNESCO in 2005 (UNESCO, 2005). The new humanism recognises the biological and ethical data of human nature, whose dignity must be safeguarded, here and now. They involve the responsibility and the duty to protect life in all of its expressions, assuring the survival of the species (Bergel, 2011).

4.2. Some ethical questions raised by post-humanism

An initial question places us at the heart of the ethical question: should human beings, including future generations, enhance themselves? This is not a simple question to answer but we can observe that human beings during the course of history, even if slowly during certain periods, have continued to enhance themselves. This is the goal of all the technical instruments invented by man, like instruction itself. However, there are some implicit limitations that make the proposals involving transhumanist change a real challenge.

One may consider the example of correcting lenses for sight. The correction of a sight deficit is therapeutic action that seeks to eliminate or attenuate an optic deficiency, achieving a better restoration of sight. We have here a curative and therapeutic action that is not an improvement/enhancement. The objective of a lens is to recover sight and not to improve it beyond the normal. This distinction between a therapeutic action to treat an illness and/or disability and an action aimed at improvement/enhancement is an important one.

The same may be said about organ prostheses that replace organs that have been malformed since birth or organs that have been damaged by trauma. In the field of cardiology there exists, for example, the pacemaker, which replaces the electrical rhythm of irregular heart contractions or ones compromised by old age, accidents or illness. In this context, new instruments to restore sight to the blind, hearing to the deaf and normal movement or functionality to the lame and/or paralysed are spectacular advances that honour the traditional goals of medicine: healing, reconstructing, offering relief, and preventing illnesses and accidents.

However, it is not always easy to distinguish between therapeutic actions of healing and actions aimed at improvement through biological engineering. The difficulty lies in attempting to define a clear line of demarcation between a state of illness and a state that is classified as normal. To what extent can a variation in ideal body weight be considered normal and when does this variation become pathological? Anorexia and obesity are already clearly pathological given that they impede the possibility of survival and, in addition, alter aspects of health care: a significant number of people who are on the boundary between the normal and the pathological do not seem to see themselves in a clear and univocal way.

Another ethical concern arises when the improvement potentially goes beyond a function that is normally exercised by man. For example, we accept without any ethical doubt or fear some technologies of improvement, such as the telescope or microscope, which are used for specific purposes, such as the exploration of space, the cosmos and the ‘micro’ world of cells and genes, as long as such instruments do not become a permanent attribute of a human being. They remain instruments at the service of human beings and not human attributes. In the same way, we consider normal, desirable and acceptable the use of a computer or a smart-phone, given that they are simple instruments. However, re-planning the human brain with cybernetic connections, electronic microchip implants and other ICT equipment seems to represent a limit that should not be gone beyond or violated.

The criticisms made of these permanent modifications highlight that such inputs are not natural and are the expression of activities that should be the exclusive work of God. We are playing at 'being God' in the view of the bio-conservatives. The transhumanist approach, in its turn, rejects the idea of 'non-natural' because a large part of human successes, with any kind of technology, is not natural, if by natural is meant purely and simply the biological body. Human creativity is a part of human nature and the achievements of man should be seen as useful for humanity and not threats. It seems that the overwhelming majority of transhumanists are agnostic or atheists and thus for them the myth of Prometheus, who stole fire from the gods, has no meaning. There are no limits that cannot be exceeded and, as a result, no transgression is being committed.

One of the defects of transhumanism and every other utopian project is not understanding the fears and the unpredictability of each human being. The tragic lessons of the twentieth century, with the horrible experience of eugenics sponsored by certain States (Fascism, Nazism, Communism) should make men more aware of the consequences of utopian dreams: the risk of reducing man to being a slave, of destroying and causing suffering, rather than offering justice, with the promise of increasing freedom and a renewed flourishing of human beings. In our time, this *Faustian pact* signed with technology has already been defined as the *opium of intellectuals*.

'Technology is not an evil in itself and it has been the source of much good (and injury) for humanity. It is an instrument, a utensil, and like every instrument it must be carefully examined and accurately used. Transforming ourselves into an instrument in the hope of achieving immortality is still an illusion. The decline of human functions cannot be blocked indefinitely. We can lengthen the duration of our lives, but at what cost? How will people with longer lasting lives live and what will they do? What will be the impact on the structures of the economy, market, work and human procreation? To these problems transhumanists have not yet given an adequate answer. Achieving a consensus on the use of human enhancement technologies is still today very complicated. Unfortunately, the current trend is still towards extreme polarisation, rather than engagement in a dialogue seeking a minimum provisional consensus. Humanity must be involved in a serious critical ethical dialogue about the creation and use of these new technologies, studying their implications and consequences for living beings and in particular for human life, the environment and future generations as well' (HOOK, 2014, p. 3101, my translation).

5. Projecting for the Future: the Search for a New Humanism for the Twenty-First Century

5.1. The task of education in the face of the complexity of human nature

We must urgently reinvent humanism, inverting the dehumanising trends that are underway in contemporary society and opposing the growing forces of alienation that tend to put individuals and nations against each other. We need a new vision of human beings that is not only an abstract concept for the exclusive use of thinkers and philosophers: we have to cultivate a vision that allows us to engage in, and put into practice, the daily realities of human life. From this point of view, we need a new educational approach in order to educate children and adults, adopting these anthropological values as parameters.

The French thinker and educator Edgar Morin (2000) has offered an innovative contribution to a new vision of human beings, laying emphasis on the *complexity* of human nature. Our classic inheritance drew up a concept of man as a rational creature/being, emphasising the value of sensitivity in human behaviour, to which – starting with Freud (1923) – were added the role and the dynamics of the unconscious. The 'animal' dimension should not be eclipsed in favour of the rational part. A long time before this, Taoism (Chinese culture), for example, laid emphasis on the balancing of the opposites in man as a source of dynamism and progress. A human being is also a gregarious social animal, always in contact with his fellows.

Modern science falls into contradictions and errors in the search for truth. Thus, a new humanism should not be limited to the sphere of reason – it should also include the human being in his fullness, in his complexity, at the same time integrating contradictory aspects: *Homo sapiens*

and also *Homo demens*. Once this integration has been achieved, a further step forward must be taken, considering all human beings, men and women, in their diversity. The battle for the recognition of the rights of women, for example, is still far from being won. Cultural diversity has been an important concept since 1980, but after three decades it is evident that excessive culturalism has led to cultural relativism and to a clash between cultures that are in tension with each other. This fragmentation is a dangerous trend on a par with that generated by exaggerated cultural homogenisation. Thus, the humanistic turning point that is taking place today seeks to overcome the simple awareness of cultural differences and to look at what is common to all human beings, independently of their specificities and differences. Are we not faced with violence and suffering because of the destruction of our environment and exposure to injustices? There is no doubt that there are many similarities between individuals and cultures, and for this reason, rather than talking about pluri-culturalism we should seek to construct an inter-cultural society on the basis of shared values, yet without ignoring local differences. These values include respect for the environment and responsibility for its conservation.

Edgar Morin (2000) speaks about a necessary interconnection between human beings and then between human beings and the planet and the entire ecosystem that they have in common. We are faced with the phenomenon of global warming, the destruction of forests, and droughts that cause famines and epidemics. A new vision of what a human being is should revolve around three fundamental concepts: *complexity, diversity and responsibility*. Once this new humanism has been established, we need to move from theory to practice. In this process, education plays a key role.

Education plays a fundamental role in the construction of a new humanism. Edgar Morin, after emphasising the subject of human complexity (*complexus* in the sense of 'kept together'), reaches the conclusion that education should avoid all forms of reductive specialisation so as to be open as much as possible to the inclusive dimension. Specialisation is important and productive for scientists and in fact makes progress possible in various fields of knowledge, but it also means a fragmentation of knowledge itself.

Planning an ideal curriculum for the future is certainly not an easy task. Science is a necessity simply because it teaches us that error exists and that an immutable truth does not exist: the scientific spirit is opposed to every form of dogmatism. The social sciences are needed to analyse and solve the grave problems of modern societies, such as, for example, injustices and violence. History offers us lessons starting with our past. Human beings know where they come from even before they decide where they want to go. Geography is a large book of cultural diversity and anthropology should contextualise this diversity in time and space. A space in the curriculum should be allocated to ethics that teaches us respect for ourselves and for other people, mental openness, solidarity and generosity towards others. These are all values that are in decline. Jacques Derrida, when inviting his readers to be hospitable toward foreigners, reminded them of the Biblical passage where the Israelites open their doors to foreigners because they themselves had previously been foreigners in Egypt.

Another important element of this new curriculum in the search for a new humanism is *languages*. Every 'language is an open window onto the world' (George Steiner) and has the characteristic of being the vehicle of a culture. Cultural diversity is inseparable from linguistic diversity. In our globalised world, with the exponential growth of internet, it is of vital importance to conserve the diversity of cultures and languages in order to avoid the dictatorship of cultural uniformity, that is to say cultural homogenisation.

When reflecting on humanistic education for the future, we must concentrate on the role of educators who are the columns of this process. Which one of us does not remember their teacher who left a lasting mark and in some decisions decided their future as well? Today there is a profound crisis in this area. This crisis will only be overcome by a reassessment of this professional figure through the introduction of better salaries, better conditions of work, better training and a better development of skills.

When thinking anew about the importance of organising human formation in a good way for the whole of the twenty-first century, we may remember the report drawn up by UNESCO for

Jacques Delors (1998). It identified four fundamental tasks for education: a) *teaching to be* – teaching to become aware of one's own nature in its complexity in order to take on and fulfil all one's potentialities; b) *teaching to do* – providing good qualifications and skills, allowing a student to find a job and his place in society; c) *teaching to learn* – teaching to develop critical thought, a capacity for self-assessment, in order to become responsible citizens always able to adapt in a world that is in constant and rapid evolution; d) *teaching to live together* – teaching to accept and respect other people in their diversity of values in order to promote a culture of peace (Delors 1998, pp. 89-102).

The work that Edgar Morin was commissioned to do by UNESCO on the occasion of the arrival of the third millennium made history. *The seven forms of knowledge needed for the education of the future*: a) knowledge able to criticise knowledge itself. The failure of every form of knowledge is the work of error and illusion; b) the principles to achieve pertinent knowledge; c) teaching about the human condition; d) teaching about human identity; e) knowing how to address uncertainties; f) the teaching of understanding; g) the ethics of mankind (Morin, 2000).

I here quote some passages from the 'complex thought' of Edgar Morin:

'An embrace is a thought that works. It extends the ethics of solidarity. Our education has taught us to separate and isolate things. We separate objects from their contexts, we separate reality into disciplines that are compartmentalised. But because reality is made up of links and interactions, our knowledge is not able to perceive the *complexus* – the fabric that unites the whole' (Morin, 2006, p. 11).

'The history of the world and of Western thought has been guided by a paradigm of disjunction, of separation. Spirit has been separated from matter, the philosophy of science; specific knowledge of literature and music is separated from the specific knowledge of scientific research...Thus we live in a world in which it is increasingly difficult to establish ties...This requires, obviously, a change/fracture in teaching that unites and at the same time separates. Complex knowledge leads to a complex way of thinking, and this complex way of thinking has ethical and existential, and also, at times, political, extensions' (Morin, 2006, p. 22).

In this context, the role of UNESCO, the agency that deals with culture and instruction throughout the world, is important. Its purpose declared in the preamble to its Constitution, which was adopted in 1945, is to construct a culture of peace in the minds of men 'since wars begin in the minds of men, it is in the minds of men that the defences of peace must be constructed'. The promotion of peace is based specifically on the 'dimension of the intellectual and moral solidarity of mankind'. UNESCO, because of its statutory function, because of its integrity, and because it is a global organisation that is present in every corner of the world, is not confined to the Eurocentrism of classic humanism – it enjoys a unique position for the promotion of a new humanism in the twenty-first century.

Human rights are still a mere intellectual and theoretical discourse given that the dignity of the human person continues to be violated in most of humanity almost seventy years after its proclamation. Today, with the techno-scientific knowledge and instruments that are available to us, a movement (ideology or hope?) is emerging that in using instrumental and technical reason seeks to completely redesign the biological nature of man, promising *the death of death* and the search for immortality already in this world, presenting, at the end of this process, *a new human being*.

5.2. The urgent and pressing challenge to invent a new humanism in the twenty-first century

When humanism flourished during the Renaissance (fifteenth century) and in the period of the Enlightenment (seventeenth century), Europe was emerging from the darkness of the Middle Ages, bringing with it a message of hope. In exalting man as a rational creature, the intention was to liberate him from the totalising pressure of the Church and the State. Eminent scientists promised constant advances; writers and artists celebrated the cult of beauty in an attempt to emulate the brilliant civilisations of antiquity, in particular Athens and Rome. The utopians already beheld in

front of themselves a shining future of happiness and universal peace, but this approach was confined, unfortunately, to the Western world alone.

Mankind reached the nineteenth century during which we witnessed the phenomena of industrialisation, nationalism and imperialism which transformed the dreams and the utopias of the Renaissance into nightmares. Subsequently, during the twentieth century, the atrocities of two world wars and all the conflicts that still today destabilise many areas of the world, as well as forms of terroristic fundamentalism that are growing alarmingly, demonstrate that man can also be *a wolf towards other men*. Economic liberalism and globalisation are increasing the gap between the rich and the poor. Poverty and frustration spread desperation and violence in the world. All countries find that they have to address the same difficulties. To complete this scenario, our planet is threatened by destruction, imperilling the existence of life in the future because of an incoherent and indiscriminate use of its resources and wealth.

This is the right moment – and this is our responsibility – to establish a new humanism for the twenty-first century. For this reason, we must redefine our vision of man, taking into account the totality of the human being in all of his complexity, of all human beings in their cultural diversity. Education is certainly the best way of constructing this new world that we desperately need; a formation that helps us to respond to the challenges of our globalised world. A message of hope arises from being able to construct the foundations of human dignity in our daily lives, and this work is not a utopian search. This humanism is a commitment that all of us must honour.

A new humanism begins with a search for the survival and wellbeing of humanity. We should not be surprised if in the early 1970s, with the origins of bioethics, Van Rensselaer Potter, one of the principal creators of this discipline, initially defined bioethics as a science for human survival and for the creation of a bridge towards the future. We have to redefine the relationship of man with the environment and with his fellows in order to achieve sustainable development (United Nations, 2015). A change in our lifestyles is needed. We need to use new sources and new forms of energy, reducing the danger of climate change, of global warming, and the factors that threaten the future of life on the planet.

Art has always been a vehicle for the expression of human passions, dreams and aspirations. If we look at classical antiquity, tragedy was a privileged way by which to exorcise the passions that exist in our deepest *self* and to retrieve the original purity within us. At that time, ethics and aesthetics were in synergy. The utilitarians of the nineteenth and twentieth centuries preferred to enslave art to the needs of progress and science which they publicly proclaimed to be the promoters of happiness for humanity. This was the critical undertaking of Pablo Picasso when he painted *Guernica*: it was his cry of peace, launched through the terror and the horrors of war and violence painted with colours.

If we look at the three great revealed religions, also known as the religions of the *Book* – Judaism, Christianity and Islam, in the Ten Commandments we find a code of fundamental values for humanism: respect for others in their diversity, tolerance, peace, solidarity with vulnerable people and towards each other. Praiseworthy, along these lines, was the work of Hans Küng, the Swiss Catholic theologian, who proposed his project for global/international ethics (Küng; Schmidt 1998).

We realise that science, economic, education, philosophy, art, religion and politics have something to say to contribute to reinventing the humanism of the twenty-first century. By uniting the forces that we have and the values in which we believe, we will be able to achieve this objective in the face of an arduous responsibility. As the proverb says: ‘where there is a will, there is a way’.

‘The twentieth century experienced the failure of the great religious or philosophical narrations. One of these is ‘the great narration of modernity’, an expression of the knowledge of a secular progressive humanism. Amongst the causes of this decisive fracture with traditions should be listed the technical and scientific revolutions, in particular evolutionism...the evolutionary paradigm of transhumanism is materialist. It is not a metaphysical approach, substance and energy, living and spontaneous, reflexive and aware...It is a dangerous paradigm, given that one can interpret it and apply it simplistically, in a brutal, blind, insensitive way and it could lead us into a

post-human world, into a barbaric inhumanity. Transhumanism has an experimental and exploratory dimension that is indissolubly linked to it and is based on freedom and empiricism' (Hottois 2013, pp. 191-192, my translation).

All of this revolves around the capacity to conserve an orientation towards good and the best. Transhumanist *generosity* is expressed by tolerance, by respect for diversity and pluralism, and by respect for the person in a broader sense than that defined by *Homo sapiens*. It is good will that goes beyond the species and attributes to every being the capacity to feel, suffer, and reject oppression and suffering. Transhumanism cannot be reduced to evolutionism. It has to absorb at least certain values that constitute the inheritance of our religious, secular, philosophical and humanistic traditions.

In this scenario created by new technologies in the field of the life and health sciences, cultivating dreams hopes, utopias and concerns, there is the ethical emergency of a synergic relationship between the materialist techno-scientific evolutionary paradigm and the concern dictated by respect for the values and ethical, political and social inheritance of the historical traditions of the European context.

Gilbert Hottois perceives a certain optimism in these scientific advances: 'The risks do not justify a rejection of improvement and the transhumanist idea that is in line with the great technological and scientific revolutions...Transhumanism well understood is a progressive humanism that is able to integrate the technological and scientific, theoretical and pragmatic, revolutions, giving a sense of hope to a post-modernity that is wandering or nostalgic for the post-modern past' (Hottois 2013, p. 192, my translation).

To end I will launch an appeal in line with ethical sensitivity. Bioethics can be the contributor of an approach of serenity and discernment towards the *novum*. Neither an attitude of pessimistic and imprudent malediction nor an attitude of ingenuous blessing towards this transhumanist project of techno-science is advisable. In addition to scientific knowledge, common sense and wisdom should also enter this scenario, in which fears and disquiet, like utopian and dramatic hope, are also projected: this is the time of bioethics. Welcome! This is a crucial and dramatic moment to demonstrate its efficacy and for it to be presented, taking on the responsibility of being a guide in human values: a guide and direction in the inventiveness and creativity specific to the field of techno-science which pervades every area of the life of living beings and in the life of humanity in particular.

Conclusion: the Urgent Need and the Time for the New Paradigm of *Sensitive and Cordial Reason*

The Brazilian thinker and theologian Leonardo Boff over recent years has addressed in an in-depth way the question of the necessary overcoming of the dictatorship of the powerful and almighty instrumental technological science of modernity in favour of a *sensitive and cordial reason*. In modern times we have almost reached the dictatorship of reason, as though it were the only category that should be taken account in the human condition. Moreover, sensitivity has been repressed because it seemed to obstruct the cold gaze of reason (Boff, 2016).

Boff (2016) observes that it is no longer sufficient to see and think in a different way. We must also act in a different way. We cannot change the world but we can always begin to change this part of the world that each one of us is. If the majority of people involved themselves in this process, we would engage in the leap that is needed for a new paradigm of coexistence in the common home in which we live.

The Earth Charter, an important document issued by UNESCO, in whose drafting Boff took part, in its final part summarises this thinking: 'As never before in history, common destiny beckons us to seek a new beginning...This requires a change of mind and heart. It requires a new sense of global interdependence and universal responsibility'. This text ends: 'We must imaginatively develop and apply the vision of a sustainable way of life locally, nationally, regionally, and globally' (UNESCO, 2000, p. 6).

One should note that this document talks about a new beginning and not only of a new façade or a simple change. It is indispensable that this change takes place at two levels: in minds and hearts. A change in minds requires a new systemic vision that involves the earth and humanity in one entity. This would also include the whole universe in a cosmogonic process, within which we move and have been generated. Then there is a change in hearts. This is one of the key knots of the ecological problem that has to be untied if we want to engage in a great crossing towards the new paradigm. This is the redemption of the rights/reasons of the heart. In a scientific and philosophical language, with rational and instrumental intelligence, we have to incorporate cordial and/or sensitive intelligence.

Our modern culture has exacerbated rational intelligence to the point of making it unreasonable, with the creation of instruments for our self-destruction and devastation of the system earth. This exacerbation has denigrated and repressed sensitive intelligence with the pretext that it has obstructed the objective role/task of reason. Today we know from new epistemology and above all from quantum physics that all knowledge, however objective it might be, is always rich in emotions and interests.

We have to enrich intellectual and instrumental intelligence and we cannot do without it if we want to explain human problems. However, in isolation this process runs the risk of introducing the fundamentalism of reason which is capable of creating the Islamic State, that attacks every other different reality, or the Shoah, namely the ‘final solution’ applied to the Jews. Rationality can offer an important contribution when it is well amalgamated with sensitivity of the heart.

Without a synergy of reason and the heart, no man can really love Mother Earth and recognise the intrinsic value of every being, respecting that being, and work to save our civilisation. Our contemporary world is turning out to be cynical: it has lost the capacity to feel the pain of other people. Nobody is any longer capable of weeping when faced with the tragedy of thousands of refugees.

The central category of this new vision is *care as ethics and as a humanistic culture*. If we do not take care of life, of the earth and of ourselves, the ‘system’ will fall ill and will end up by not assuring the sustainability or development of what E. Wilson calls ‘biophilia’, that is to say love for life. We love everything that we take care of. We take care of everything that we love.

‘We need to introduce a new ‘mind/reason’ (new vision of the world) and a new heart (reanimate sensitive and cordial reason in order to balance intellectual reason which has gone mad). If we fail in relation to this alliance between the head and the heart, we will not have reasons to love and to take care of the nature of every being that lives with us. The day that human beings learn to respect every individual living or inert being, they will no longer need someone to teach them to respect other human beings and their rights. The ethics of respect, of care and of collective responsibility can save us.

We do not need to invent anything. We need only engage in a Socratic exercise, unveil reasonable reason and make it an aware civilising value. To understand things as they really are, we are made of passion, emotions, sympathies and antipathies. Psychoanalysts have convinced us of this reality empirically. This cordial reason must be promoted in schools, in human relationships, in public policy, in every word and action of people. This applies to all sectors. We are humans immersed in reality where we hear the heartbeat of other people, nature, the earth and the infinite.

We cynics are insensitive and unable to weep when faced with the misfortunes of others. This situation is typical of the time of the barbarities of generalised dehumanisation. We must reinvent the human being in order to learn to live on the planet with all those beings who form the community of life with him’ (Boff, 2014a).

If the opposite happens, we will run the risk of not existing in the future. We are trying to construct an ‘immortal superman’ and thus it is that if we return to being the new slaves of NBIC (nano-bio-info-cogno) convergent technologies and if we do not adopt ethical and bioethical values as a guide for our journey, our future horizon itself will appear rather dark.

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