

THE BIOLOGICAL AND EVOLUTIONIST BASES OF ETHIC

Brunetto Chiarelli

Institute of Anthropology, University of Florence, Florence, Italy

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1. Introduction

Religious ethics, medical ethics, political ethics, environmental ethics, business ethics, bioethics: a never-ending sequel of terms that began in 1892, when Felix Adler (1851-1933), questioning Christian and Jewish control of moral dogmas, established the Society for Ethical Culture in New York. Moreover, nowadays, the terms moral philosophy and ethics are often mistaken for each other and this gives rise to misunderstandings. So far, the development of ethical norms in Western culture has been based on the distinction between theological ethics and humanistic ethics. The former follows Aristoteles, according to whom everything has a ultimate goal that is God, understood as pure action, a thought thinking itself. According to this, man's goal is a contemplative life allowing him to share divine life. The Stoics, following Aristoteles, believed that living in accordance with Nature was the ground of moral philosophy, since they regarded Nature as a rational and perfect order being. God himself.

Humanistic ethics bases moral philosophy on man's own demands, primarily on survival. So it appoints moral philosophy to guarantee the survival of man as an individual or as groups of individuals co-operating and living together in peace.

Ethical conceptions are characterised by duality because they can be either theological or humanistic. This duality, peculiar to Western culture, can now be overcome and integrated by a "global bioethics" with rational and naturalistic grounds, as required by the advances in scientific knowledge.

2. The Historical, Cognitive and Cultural Bases For "Global Bioethics"

On 2003 the Earth's total population reached 6 billion with a growth rate of 79 million a

year. In 1835 the figure of 1 billion was exceeded, thus in less than two centuries (or 8-10 generations) the human population has expanded six-fold. The current upsurge of the growth rate marking the turn of the millennium can be compared to the period of transition between the Paleolithic and the Neolithic (10,000-8,000 years ago), when the world's population rose from 10 million to over 100 million. The introduction of agriculture, breeding, fermentation and food conservation enabled Neolithic humankind to overcome the ecological crisis that had brought famine and despair to the hunters of the late Paleolithic.

The present is a critical time when population growth and levels of raw material interact, and man will succeed in mastering it only if he is able to restore the balance between himself and the natural world by using his intellectual faculties. Such a crisis can be overcome if the ethical problems concerning the applications of the biotechnology and genetic engineering, which call for quick and innovative decisions, are solved.

Our knowledge in fact is being revolutionized by the impact of scientific changes: firstly by nuclear fission, that is the conceptual basis of matter; secondly, by the crisis of the concept of the individual, due to organ transplants; thirdly, by the development of molecular biology and biotechnology and the decoding of genomic information, as well as that of “genetic engineering” undermining the very concept of species.

Will the development of a “genetic engineering”, that can yield energy and food, enable us to replace coal and oil shortage as a source of energy? Will bioengineering be able to produce cheap food which can satisfy the needs of a growing population? Will mankind be able to absorb the effect of these new technologies within a few years? What is going to be the impact of new technologies on the environment? What a kind of world are our children going to inherit? As for governments, will they be able to manage such changes? How many lobbies will affect these choices? Will politicians be able to consider these issues by the short time left?

3. The Self-Consciousness of Problems

The 1960s and 1970s were marked by a growing awareness of environmental issues and the critical relationship between Man and Nature. This was the outcome of the critical remarks by scholars of various disciplines, including theologians and philosophers, which gave rise to new cultural movements with a strong focus on environmental problems in the late 1970s. These remarks are summarized in the Stockholm Declaration on Human Environment (1972), where one can read as follows:

“We see around us growing evidence of man-made harm in many regions of the earth: dangerous levels of pollution in water, air, earth and living beings; major and undesirable disturbances to the ecological balance of the biosphere; destruction and depletion of irreplaceable resources; and gross deficiencies, harmful to the physical, mental and social health of man, in the man-made environment, particularly in the living and working environment.”

Similarly, the solemn declaration of the Christian representatives gathering in Basel at

the 1974 Council of European Episcopal Conferences reads: *“Our prosperity is mainly based on other peoples' poverty. We soil the world we live in with our selfishness and self-interest”*. The concept of the quality of life and the quality of the environment are closely connected, is confirmed by the final remarks of the UNEP Intergovernmental Conference on the Environment in Nairobi in 1982:

“During the last decade new perceptions appeared: the effort to manage the environment, the deep and complex interrelationship between the environment, development, populations and resources. Population growth, especially in urban areas, gave rise to social tensions. A global, region-wide approach stressing these relations is going to promote a sustainable development.”

With his typical brightness the Nobel Prize laureate. Carlo Rubbia (1984), said: *“We are witnessing an experiment where the test tube is the Earth. Moreover, we can watch from inside, and nobody can guess what will happen”*. However, the development of genetic engineering also enables man to modify the human genome and the one of the species he studies. In 1984, the Austin friar Arrano Rodrigo, remarked: *“For the first time in history a biological species is in a position to plan its own future by using its descendants as experiment tools”*. The well-known geneticist Francisco Ayala (1985) wrote in support of this view: *“Before the human race appeared no species could determine its evolution patterns; now humanity has the technical skills to do and maybe we can even direct genetic changes”*. Which was echoed by Carlo Rubbia (1984):

“Now man claims he can change the genetic code. Let us consider we can plan, change and recognize the dualities of a person by his genetic code. We have not gone so far yet, for nature can still defend itself well. But man used to be tenacious in this field, so one day he will be able to modify the genetic code. This is an Aladdin's lamp that we had better wonder whether it is worth opening.”

The words uttered by Francois Jacob in 1987, on the centenary of the Institute Pasteur, are also as clear:

“In the solar system nothing is more amazing than a cell turning into a man or a woman. It is a real wonder! Even science fiction becomes a stammering of imagination. A single cell, then a group of cells, then billions of cells. A universe where other cells are individualized so the human being starts speaking, reading, writing. I am bewitched by this. I would like to know the details ... so far, genetic engineering has not been applied to man. We all agree that this must not be done. Biologists mistrusted first. The genetic values of man must be respected. There have been too little advances in scientific knowledge. If we want to make out what AIDS is, we must resort to genetic engineering. Each new discovery has a positive side and a negative one. When the Stone Age ends and the Iron Age begins the knife is discovered This is a useful tool, if you want to peel an apple, but it can be a deadly weapon as well. Nobody knows what science can achieve. Current forecasts are short-term, so they are uninteresting. Genetic engineering is a fantastic tool, but we must make a clear distinction between the atomic bomb, that is a bad use of science and science itself.”

Therefore, it has become imperative to revise the idea of a nature exploited by man and

the common use of biotechnology. Man must manage environmental resources and his scientific heritage with a sense of responsibility. According to the aphorism by Galileo Galilei, “*I look for the light and for the benefit science can bring*”. Scientific culture must revise its position by placing the training of scientists before that of technologists. Our relationship with nature is wrong, but it is because the current establishment can neither raise conscious citizens nor upright statesmen. So we must re-found an ethics based on responsibility and solidarity as a requirement for human survival, as Russel Van Potter (1971) and Hans Jonas (1990) maintain. The natural environment must be understood as a living system of which man is an integral part. Environmental awareness requires us to not only know the natural balance but also respect and recover it. This implies an attitude based on sharing and helpfulness replacing the exploitation peculiar to Western culture. In this perspective, we must revise all of our attitudes based on the exploitation of nature and the unlimited use of biotechnology. On the contrary, we must enable man to manage environmental resources and his scientific heritage. Today's ethical problems are mainly noticed by biologists and natural scientists, but they affect all sciences and will prove to be vital for all living species to survive.

4. The History of Ethical Concepts

In tracing the development of ethical concepts either a historical method or a naturalist method can be followed. To date, most scholars have followed the former. In order to understand how the concepts of good and evil, right and wrong developed and how these can be applied to our life, we need to go back to ancient Greece. This systematisation started from things and tried to conform itself to man; by following what we could call an experimental method it had made a concept of good on a human scale.

Ethics was in fact the third, highest branch of philosophy, alongside logics and physics. According to this view men were also “things”, and one's own happiness was the ultimate goal. One had not to care about harming others, but only about his own pleasure: this was a hedonistic conception. The same process marked the development of conceptions regulating relations between men as well as those between men and things.

The original ethics involved human relationships, restrictions on personal liberty affecting the members of a social group (father and mother, son and daughter, husband and wife, etc) and their own rights. The Mosaic law from the fourth commandment summarizes these norms well.

Western culture was deeply affected when the experimental bases of ethics were replaced by the metaphysical ones. This change started with Plato, according to whom the way to knowledge is a conversion to good. A leading role was played by the ascetical conceptions of the Neoplatonist, aiming at detaching themselves from this world and looking on a transcendent one. Ethics was thus affected by mysticism. These mystical trends were further developed by Christianity. In the Middle Ages Christian ethics was unable to solve the contrast between man and nature, liberty and need. In their attempts to do so, Christian moralists divided the world into two parts: good and evil, with the former being placed in some distant future (happiness, heaven,

etc). During the Reformation free will was carefully considered, but contrasts between good and evil could be reduced only in part.

The ethics which then developed in the Western world affected relations between man and society, the latter being understood as an unspecified group of individuals. This is, in essence, how law and its rules developed, including the democracy that is peculiar to Western culture. Following this, the philosophical theories of the early nineteenth century led to the utilitarian and positivistic doctrines spread into mid-central Europe. For example, Hegel's positivistic theory of history (according to whom the rational and the real are identical) led to Marx's economic conception of ethics (according to whom history has no moral sense and will has no conceptual value). But beyond the metaphysical barrier, the whole problem subsists. The natural world, as well as the concepts of good and evil, fair and unfair, right and wrong, obedience and disobedience, obligation and liberty must be clearly systematized. Current humanity is constantly pervaded by such dilemmas, as it is thwarted by the responsibility of a continual choice and by the search for general rules to resort to.

The concept of ethics can also be analysed in a naturalist and rational way, beyond a hedonistic/utilitarian outlook of individual happiness as the only aim to pursue and beyond a mystical vision of good as perfection to strive for. If the issue of ethics is founded on scientific bases this first leads to agnostic attitudes, then it excludes all branches of learning but scientific ones. Science is regarded as the only source of knowledge and the only way of considering reality. In this formulation the theological conceptions of ethics are meaningless.

So we reach the bio-evolutionist position peculiar to the schools of Lorenz and Wilson. According to Lorenz, animal and human behaviours are "*functions of a system created and shaped by a historical process turning in phylogeny*" (1978). According to Wilson, ethical values and physical characteristics may have developed and stabilized through natural selection, giving rise to a genetic evolution of moral predispositions. "*So in the human brain there are sensors that affect our ethical premises unconsciously and deeply; these roots develop into the instinct of morality*" (Wilson, 1980). Yet in Western culture there is no coding of ethics regulating the interaction between man and the natural world. The relationship between man and nature, as Aldus Leopold asserts (1933), remains strictly economic. The Earth is regarded only as a property, and the rules regulating the relationship between man and nature provide only rights and no duty for the former. The extension of ethics to the natural environment is required by both evolution and the current environmental crisis. It is the third stage of a sequence in which the first two have already been exceeded.

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Biographical Sketch

Brunetto Chiarelli, born in Florence in July 1934 in Florence. Resident addresses Institute of Anthropology, University of Florence via Del Proconsolo, 12 - 50122 Florence.

Qualification

- 1957 - Degree in Natural Sciences, University of Florence in
- 1960 - Degree in Biological Sciences, University of Florence,
- 1964 - Professor of Anthropology
- 1965 - Professor of Biology and General Zoology including genetics and biology of human populations
- 1968 - Ternate unanimously the competition for the chair professor of Anthropology at the University of Padua
- 1978 - Maitre de conferences in Anthropology, University de Paris VII.

Academic and Scientific Responsibilities

- Past President European Anthropological Association
- President European Association of Global Bioethics
- Vice President International Union of Anthropological and Ethnological Sciences
- Editor Human Evolution, International Journal of Anthropology, Global Bioethics.
- Teaching activities

Coordinator of the Doctoral School of Anthropological Sciences

Faculty of Science, Degree program in Natural Sciences

Anthropology

Anthropometry and Ergonomics

Museum Sciences

Biodemography

Principle Research Activities

Human Evolution and Primatology

Comparative Cytogenetics and Molecular Anthropology

Biodemography

Human Ecology

Ethnology, Neurobiology and Neuropsychology