

Races: only a social concept

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1. Historical introduction: a typological approach

The concept of race, although not accepted by all zoologists or botanists who prefer to speak of “varieties”, seems rather easy to understand when it is going about the animal or vegetal world, however, its application to human beings is much more complex and controversial. The term *race*, used in the French language since the 15th century, seems to derive from the Italian *razza*, which means family or group of individuals; *razza* derives for its part from the Arabic *râs*, which can be translated as origin (Marquer, 1973); since the 18th century, it has been used as a taxonomical infraspecific category also for the human species.

Anthropology focused very often in the past, on the study of differences between human groups and neglected the analysis of the variability present in each population (Susanne, 2003). It consisted in a typological approach which tends automatically to accentuate the variability between populations, minimising at the same time the intrapopulational variability. This attitude is very ancient. Since 1350 before our era, the Egyptians attributed to populations clear physical differences in the form of 4 colours: red for the Egyptians, yellow for the Eastern populations, white for the Nordic populations and black for the South-African populations.

Since a very long time, the descriptions of foreign populations are regularly filled with profound prejudices. This attitude (“autrisme”) brings with it that “the other” is systematically considered as being imperfect, included (and foremost) in psychological and sociological terms, what permits, in fact, to justify the existing discriminations. Already the historian Tacite (55–120) described the Germans as dirty and lethargic, feeble and less sensible. We will find these terms, or equivalent terms, all along history to “scientifically justified” wars, colonisation, discrimination. Still with Tacite the antisemitism is present (“over there, all is profane what is sacred to us and all is permitted what is odious to us”). The constant is thus to lower “the other” till dehumanisation: he is not intelligent, he is lazy and dirty, he is even – supreme abjection – a cannibal.

Following the Romans, the first Christians practised infant cannibalism. During the Middle-Ages, Jews were accused of the same crime and afterwards, numerous "primitive" colonised societies (Susanne et al., 2003b).

Xenophobia does exist without any doubts, but the hatred for the race does not always appear. Herodotus maliciously noted that the Egyptians called barbarian all those who did not speak their language, and Cicero that men differ through knowledge, but are all equal through their ability to knowledge. Pliny the Older (23–79) sees the difference between Africans and Europeans as a direct consequence of the climate: "Africans are burnt by the celestial corps (...) and they come to this world with a burned skin (...). Far away from the sun, men have a skin white as icing (...)".

Since the 15th century, European explorators give, during the great discoveries, to this notion a spectacular illustration: they present new animals and encountered human beings. They bring back Africans or Americans and exhibit them to the unbelieving Europeans who see them as imperfect copies of themselves. Even if pope Paul III proclaims in the bull *Sublimis Deus* of 1537 that the Indians are truly men (*veros homines*) suited to receive the beliefs, the canon of Cordoba, Sepulveda, justifies Cortes' wars by stating that the Indians were barbarians, slaves by nature and that they sacrificed humans.

In the middle of the 18th century, two schools of different thinking, the monogenists and polygenists, are vividly opposed. According to the monogenists, who stick to the Writings to the letter concerning the creation of Adam and Eve, all men belong to one species, issued from one creation. Polygenists, on the contrary, interpret this text more liberally: they affirm that the large human groups have different origins and result from distinct divine creational acts. This debate that to-day seems absurd, hides in fact, as often, different social conceptions. The monogenists, although theologically more conservative, were socially more liberated and were the advocates of evolution: for them, races were the result of natural selection. The polygenists, theologically more "liberal", denied this evolution and considered that human groups belonged to different species: the social discrimination of certain groups was then rationalised, equal rights were absurd.

At the time, it became evident that European societies had a "barbaric" past, with individuals who did not use metal but used simple tools, who lived in villages and not in towns and who were entailed in perpetual conflicts. The advanced technology and social life was thus an outcome of a historical development and resulted from successive improvements. Other societies remained at a less "specialised" state and none of them, according to the thinking of the time, had as much progressed as the Europeans.

There was confusion between culture and biology; one supposed that cultures technically simple are composed of less intelligent people. Only at the end of the 19th century becomes the analysis of cultures less ethnocentric. In 1896, Frans Boas supports that cultural variations might be explained through ecological and historical conditions. William Graham Sumner (1906) recommended to study cultures for what they are but without any judgement of value, without approbation nor condemnation. We pass to the concept of cultural relativism.

It was the Swedish Carl von Linné, who, for the first time, established a scientific classification in genus and species, including the human one, and we also owe the denomination *Homo sapiens*, still in use. In his *Systema naturae*, from the second edition (1740) and until the 12th and last (1778), he distinguishes the white Europeans (*Homo sapiens europaeus*), the red Americans (*Homo sapiens americanus*), the yellow Asians (*Homo sapiens asiaticus*) and the black Africans (*Homo sapiens afer*). He also designs the lost children in the woods as *Homo sapiens ferus* and he regroups the Hottentots, certain congenital diseases and the mythological populations under the subspecies *Homo sapiens monstrosus*. His descriptions mingle physical characteristics and personality traits. In his description of *Homo sapiens americanus*, we find the following terms: red skin, bad temper and submissive, black hair, rigid and thick, enlarged nostrils, rough face, thin beard, obstinate character, free, satisfied, body painted with red lines, directed by manners and customs. This classification does not correspond to the one used for the other animals; it is very generalising (i.e. the European Man is blond with blue eyes); it appeals to judgements of values (i.e. the African Man is lazy and slow); to personal traits (the Asian Man is melancholic), as customs (the African anoints himself with grease) and as clothes. This classification, apparently geographical, translates in fact the sociocultural judgements of the period: only the white European Man is serious, strong, active, intelligent, inventive, ... (thanks!). Linné described a second human species, *Homo troglodytes*, where he groups certain anthropomorphic traits of the chimpanzee and the orang-utan.

Count Buffon also uses behavioural and cultural criteria in his description of human diversity but he is not preoccupied with the classification of variations. He rather tries to explain their origin and he is the first to use the term race to designate local populations associated to their particular mesological conditions. In his book *Variety in the human species* (1749), Buffon describes as well physically as culturally numerous populations such as the Eskimos, Turks, Swedes, Russians, Ethiopians, Senegalese, Congolese, Hottentots, North and South-Americans, etc. (often in an imprecise manner and in the spirit of European superiority). In his book *The degeneration of animals* (1766), Buffon even develops a theory of microevolution by invoking three plausible causes of change: climate, nutrition and slavery (separating the individual from his native climate and nutrition). At the time, even if Buffon was read widespread by an educated public, his reputation was eclipsed by Linné's, who's approach was considered more scientific.

2. Anthropology and the concept of races

Can we say that anthropology followed the classificative approach of Linné until the 1950s and afterwards the interpretative approach of Buffon? This would be forgetting the historical context of the work of Linné and Buffon and it would be too much schematising the history of anthropology. It would not prevent that anthropology in its quest for classification of races (how many are they? what are their distinct features?) was embarked in a dead-end and in

the frame of an expired thinking on the biological knowledge. In an attempt to describe subspecies, it legitimated in fact the possibility that the human species is subdivided in a small number of races. The progress of biometrics, craniometrics, statistical studies of variability and of genetics will confirm that the question was wrongly expressed.

The ideological concepts of race and racism were not developed with Hitlerism but are clearly expressed in national writings of the 18th century. This is the case for i.e. France with, as of 1732, its essay on French noblesse where count de Boulainvilliers defends the thesis of the Frank origin and of the excellence of great families whose power was slowly decreased by the absolute monarchy.

Racial scientific studies start as of 1775 through the works of Johan Friedrich Blumenbach (1752–1840), *De generis humani varietata nativa*, who, in the same spirit of Linné, describes 4 human varieties, then 5 in the second edition (1781). It concerns Caucasians (Europe, West Asia, North Africa, Eskimo), Mongolians (East Asia), Ethiopians (Sub-Saharan Africa), Americans (New World, except the Eskimos) and Malaysians (Oceania). It needs to be highlighted that Blumenbach took two precautions, first, to use only physical characteristics in his descriptions and, second, to recognise that his classification into variety (and not into races) is arbitrary in the way that it applies to characteristics where the variability is continuous and where the boundaries between human groups cannot be clearly established. The terms race and variety were used following an interchangeable way by Jean-Baptiste Lamarck and Georges Cuvier. The varieties of Blumenbach were popularised under the name of white, yellow, black and red races. But, as these divisions were arbitrary, nothing prevented to propose subdivisions (also as arbitrary) and the step was quickly made: the Europeans were qualified as Northern, Mediterranean or Alpine. From this moment, authors will continue proposing classifications and increasing the number of racial divisions and subdivisions: in 1900, for instance, the French Deniker considered at least 27 races and 22 subraces. In fact, the only conclusion of these studies is that populations are different, but the threshold where a difference would allow to separate two races is not defined. One is still in a purely arbitrary system.

This is what Charles Darwin sustains in his chapter 7 of *The Descent of Man and Selection in Relation to Sex* (1871) where he describes that man's races are not sufficiently different to really distinct them and that human population are constantly mingling.

In 1855, count Arthur de Gobineau (1816–1882) publishes his *Essay on the inequality of human races* wherein he develops the theory stating that civilisation develops and destroys itself in proportion of the purity of "Arian blood". This work is the product of a French aristocracy in loss of power. It is a leaflet against democracy and egalitarianism, a false defence of aristocracy and feudalism. Maybe these ideas were in the immediate not very sensational, but became more serious around the turning of the century when other books were clearly inspired by the ideas of Gobineau. We can quote *The Genesis of the 19th century* published in 1899 in Germany by Houston Steward Chamberlain and *The Passing of the Great Race* published in 1916 in the USA by

Madison Grant. Less known maybe is that Jules Soury and Maurice Barbes, figure heads of the anti-Dreyfus, popularised nationalism founded on races in *Unrooted*, cult book for nationalist generations.

In the 1920s, Ernest Hooton adopted a position which distinguishes itself from racial eugenism: he draws attention to the biological variation within populations (the polymorphism) and underlines that in all races individuals can present favourable or unfavourable traits. Fashion still being the study of races, this variation between individuals of the same group was considered as less beneficial than the one between groups of individuals. For the classification of races, he proposes to use non-adjustable traits, such as the form and the colour of hair and eyes, the form of the lips, the ears, the chin, etc. Despite these new ideas and techniques, the existence itself of racial categories was never put into question.

Anthropologists were passionate about the skull and the brain. The Badois Franz Josef Gall (1758–1828) founded in 1795 the phrenology which pretends to establish exact correlations between the form of the skull, the development of different parts of the brain and the behavioural traits which were supposed to be programmed in an inherited manner in the brain. The 19th century sacrificed to this fashion of phrenology, which Darwin was joking by reminding that they accepted him, children, their aptitude to become an excellent clergy member.

Paul Broca (1824–1880) developed the craniometry. This French anthropologist and neurosurgeon, who founds in 1859 the first European anthropological organisation (La Société d'Anthropologie de Paris), publishes numerous statistical analysis and puts these data in relation with racial differences. The works of Broca are placed in the dominant pattern of thinking from the 18th to the beginning of the 20th century that leant largely on the following reasoning: the brain contains ideas, different individuals have different ideas, the quality of the brain is thus at the origin of the quality of ideas. The German anthropologist from the 1930s, Baur, Fischer and Lenz, developed in their book on human heredity this idea that the brain largely differs in function of the degree of civilisation of their owner and that it is thus of anthropological interest. For the sake of little history, Baur died in 1933, Fritz Lenz joined the Nazi party in 1937 and directed a department of the anthropological institute Kaiser Wilhelm, as where Eugen Fischer, who joined the Nazis in 1940, became director of this institute. These false interpretations were based on the real fact that the mind is materialised in the brain and not, i.e. in the pancreas, but it is not less clear that the brain does not secrete ideas the way the pancreas secretes insulin: the prevailing culture influences profoundly the values and the ideas of individuals. Nevertheless, it is only much later that anthropology will realise this.

The 19th century has also an interest in the cranial capacity, the published data invariably attribute higher values to Europeans than to members of other populations. In the middle of the century the cephalic index (max. width x 100/max. length of the skull) is proposed by the Swedish anatomist Anders Retzius. This index becomes a key element of racial studies and theories on evolution of populations according to migrations and racial mixture of populations with elongated or round heads. Through a study on Jewish and Sicilian migrants, Boas shows, as of 1890, the important plasticity of this index. In

spite that this plasticity was confirmed by Shapiro and Hulse in 1939 through a study on Japanese, it was minimised by renowned authors such as Hooton, Baur, Fisher and Lenz: the index remains for long as essentially hereditary.

From these researches result a large variability within each "race", what will bring Broca and his student Paul Topinard to develop the concept of "type": the ideal morphology which can describe a group and certain individuals of that group that accomplish it better than others. Modern populations are supposed to consist of a mixture of hereditary or racial types (dolichocephales, brachycephales, alpines, nordics, ...): while describing those types, one supposed to reconstruct the contribution of different races within a population.

3. The naturalistic debate

The race, in biological sciences, expresses a taxonomical concept and its application to the natural history of man is equivalent to the categories of subspecies or of variety in the systematic of animals and plants. In this sense, race can be defined as "each natural group inside a species from which the individuals present a determined combination of genetic characteristics". However, the application of this concept to the human species was never unanimously accepted, and many anthropologists are opposed to its utilisation. For many, the notion of race used by a general public or the notion of "large race" (based on the skin colour for instance) does not have an important biological meaning and does not suppose in any way clear subdivisions of the human species, contrary to what some can imagine.

Those who defend the notion of race in human beings have mainly a naturalistic approach when a race is strictly equivalent to a subspecies. Considering *Homo sapiens* as a species, such as many other species of the biosphere, it has to be studied following categories used for the study of all other species (Blanc, 1980). In paleoanthropology, many authors define modern human beings *Homo sapiens sapiens* as a race in the biological sense, to distinguish from the other race *Homo sapiens neanderthalensis* (this nomenclature, however, has some philosophical connotations and is in human evolution highly discussed nowadays).

The naturalistic concept of race is based on biological traits, influenced by the evolutionary forces which resulted in the actual reality of the human species. Race, considered in this way, is an infraspecific taxonomical category formed by populations and of course by individuals belonging to the same species and presenting a combination of common traits different of those presented by other races of the same species. The concept of race also includes a geographical component, different races being moreover formed through a geographical isolation of populations belonging to various living conditions or environments. But, in human beings, the large races (or subspecies) are populations not reproductively isolated and are not, and have never, been pure (Templeton, 1999).

Some authors consider the races as "semi-natural populations having some genetical traits in common, from which the immediately visible ones are the most important". The term semi-natural refers to the nature of human beings itself, partly biological and partly cultural or social. Concerning the immediately visible traits, essentially the morphological ones (pigmentation of the skin, shape of the skull, hair structure, etc.), they are however submitted to environmental influences and express not more than a little part of the genetical programme (Riquet, 1986). It results in a great difficulty to divide human beings using biological traits: genetic similarities exist more between Europeans and Africans than between Africans and Melanesians, even if these two last groups have a dark skin. It demonstrates that the racial traits are largely incompatible with most of the genetic differences between human populations.

One of the main problems of a racial classification consists in the definition of the type and number of characteristics (morphological, biochemical, physiological and pathological) necessary to recognise different racial groups. In function of this difficulty, many differences exist in the classification as well as in the number of defined races, between the 6 races proposed by Boyd (1964) in function of blood phenotypes and the 53 suggested by Biasutti (1959), or the 27 of Vallois (1967), the 37 of van Eickstedt (1934) or the 50 of Coon (1962) only for Europe. Everything tends to indicate that it is, doubtlessly, very difficult and arbitrary to obtain a satisfactory and scientifically rigorous classification. The numerous researches about differences between human groups demonstrate that these groups are genetically so similar that many scientists question the own existence of races in human beings.

The characterisation of populations, not through physical traits but through genetic frequencies, also offers contradictory results and the maps of the different gene distributions in the populations all over the world do not superpose. As mentioned by Templeton (1999) on the basis of the DNA analysis in many human populations, "human beings are one of the genetically most uniform species that we know, a large quantity of variation exists inside humanity but basically at individual level. The interpopulational variation is much less important".

As we saw in the history of racial studies, anthropologists did not agree on the definition of race, the number of human races or on their identification but they did not doubt the existence of genetically distinct races. To bring them forward, a research path was to study the genetical traits that are not influenced by the environment. In 1900 Landsteiner discovered the blood system AB0. As, on the other hand, the European culture made the link between blood and heredity almost mystical, the serological works were particularly credible. The blood is heredity, heredity is the race, nothing more simple to affirm: the blood is the race! As of 1919, Hirschfeld and Hirschfeld distinguish 3 "types" of AB0: European, Asia-African and intermediary, in function of the frequencies of the blood groups. However, they note that these "types" do not correspond in a simple way with anatomical races. According to them, the human species is of origin type Oss, but has been invaded later on by two biochemical different races, A and B. Laurence Snyder in 1926 notes that the regrouping of serological races is arbitrary, what does not prevent him from defining 7 races!

Following these studies, it is clearly that raciology cannot be used in the AB0 system to distinguish racial types: Hooton (1931), whose interest was to isolate pure races, noted it himself.

Following this "failure", one tried then to classify races by adding data from other blood groups, first MN, then Rhesus and several more afterwards. Eventually, each population can be characterised through different frequencies of diverse antigens. What is the interest for raciology? None of course, but it took half a century to realise it. Following numerous works, serology had finally brought an important conclusion: a mongoloid, caucasoid, indo-dravidian or Basque or whatever allele does not exist, populations only distinguish themselves through different frequencies of genes.

It was only after the Second World War that human diversity was considered as the result of the microevolutionary process whereby gene pools of populations were differentiated under the effect of natural selection and genetic drift. The pretended "unmoveable" races became fleeting clusters of alleles. These populations were in constant mingling, adapting to local conditions, joining or separating. With molecular biology in the 1960s, phenotypes are abandoned in favour of genetical data. In 1950, a Cold Spring Harbour symposium of quantitative biology, named "Origin and Evolution of Man", concluded that racial classifications had no longer scientific meaning and that researchers should rather be interested in the evolutionary process and the genesis of diversity within human species. It is in the same spirit that several declarations of Unesco should be filed: the *Declaration on the race* of 1950, *Race and racial differences* of 1951, *Propositions on biological aspects and the racial question* of 1964 and the *Declaration on race and racial prejudices* of 1967. These texts partially answer to anthropological preoccupations but are also political and/or ethical answers trying to avoid that biological data would be wrongly used to benefit different forms of racism.

A controversy in 1961 marks a change in the opinion: Carleton Coon, President of the American Anthropological Association, resigns from this position after a vote of censure against the work *Race and Reason* of Carleton Putnam. This book was rather an anti-integrationist leaflet: integrationism and equalitarism were herein considered as subversive doctrines with origins in a conspiracy of communist and Jewish anthropologists. Coon sees herein only few objections. He himself publishes the following year his book *The Origin of Races* (1962) wherein he describes in a pure Linnaean approach 5 races: caucasoid, mongoloid, australoid, negroid and capoid. According to Coon, these 5 races were already traceable in the Mid-Pleistocene under the form of 5 races of *Homo erectus*, each having evolved towards one race of *Homo sapiens*. Although Coon does not draw political arguments from it, his book is no less one of scientific opinions and political actions.

The scientific community will receive this book with considerable critics; the changes in approach and mentality become as of then explicit. Also in political terms, equality of rights becoming a social reality, raciology becomes irrelevant. The study of differences between human groups will as of then no longer be classificational but will retrace the origin of differences and try to understand the processes that it governs. The problem is that the limitations

between such studies and studies of racial type have (and still are) often been blurred. If the biological study on human variation is relevant, problems of social and moral kind are often linked to it. Men have equal social and cultural rights, it is thus racist to classify individuals on the basis of traits of a group; it is immoral to pronounce judgements of values by mixing physical, mental, social and moral differences (Deligne et al, 2001).

Anthropology contributes to our understanding of human biological diversity, which is, compared with closely related species, very low at morphological and biochemical level. This biological diversity is geographically linked, with human beings sharing more similarity in the same region than in distant ones. Moreover, genetically speaking, human beings are as different from people of your own population than from people of other populations or "races".

4. Stereotypes of race

In the typological and racial classification, the hypothesis is to say that races in their pure state have existed in the past, before migration caused a large mixture. In this reasoning, one forgets that migrations have always existed and thus gene flow as well. To say it with a play on words "when groups meet they may or may not bleed, but they always breed".

Typological writings, the myth of inequality of races but also the eugenic atmosphere will nourish Nazism and lead to atrocious acts in Nazi Germany. France too will have its ideologists of racial purity. Notably Alexis Carrel, Nobel prize of physiology, creates in 1941 a "French foundation for the study of human problems" aims to "safe, improve and develop qualities of the French population". However, even the 3rd Reich Nazism, even the university of the Reich in Strasburg and its terrible experiences, will not succeed in correctly defining the concept of race on a biological basis. To statue on the concept "Jewish", they will have to accept that the religious criterion is still the more operational.

In front of the continuous distribution (in clines) of morphological or biochemical traits studied, which renders each "racial" demarcation arbitrary, anthropologists to-day prefer to reject this typological concept which, moreover, has diverse methodological inconveniences. It sterilises, in fact, the study of the origin of human variability and its comprehension; it also occults the study of the dynamics of populations and their interaction with the environment.

To group and categorise elements can present some advantages if a clear classification can be performed but if the categories are blurred, it's not even worth trying. The notion of race, as the one of cline or population, is an abstraction used to organise an information: it is not a real fact but a tool, not an end in se but a way of organising data.

To-day, classifications in tens, even hundreds, of races are no longer used for too complex and arbitrary, they do not respond to criteria of a good classification. The large concept of "great" races is not entirely abandoned in the current language, although even here the concept remains blurred: i.e., certain inhabit-

ants of India are as black as Africans of the "Negroid race", whereas Kalahari San Africans have a white skin and that the variability of skin colour between those groups clearly overlaps partially.

The concept of race adds no interesting, nor useful, information, whereas the study of the distribution of traits and their variability is fully justified. Moreover, the racial classification interferes with the objective study of the variability, it is a loss of energy as it proposes pseudo-solutions to non-problems and it creates, amongst other, a mental situation that can only be an open door to racism.

In current language, the term "race" is still used to design sociological groups in a complex society, without corresponding to a biological signification whatsoever. The Hindus are considered as "white" in the USA but as "coloured" in the UK (as well as the Chinese, Pakistani and Malaysians). In Southern Africa of the apartheid, they formed a separate race (whereas the "coloured" race was represented by people of mixed origin). The first generation mulatto of a parent of African origin and a parent of European origin, who received the same genetic information from his father as from his mother and who has thus an ancestral origin of as well African as European, is considered in practically all societies as belonging to the black population. In South America, "mestizo groups" are often better defined with an enormous wealth of terms to name all the variances.¹ The biological reality does thus not cover the sociological situation. Certain American states have even defined the black race as formed by individuals having up to 1/8th of black ancestral origin.² According to the laws of Nuremberg of 1935, a far Jewish origin was enough to be considered as Jewish.

All scientists failed to create a consistent identification of races. Anthropologists agree that race, as a biological variability of humans, does not exist (Nanda and Warms, 2004). No group of humans has ever been isolated for long enough to make populations very different from others. The anthropological problems are many, such as the arbitrary choice of traits used to define races (blood type cannot be weighted in comparison with skin colour, or hair shape versus lactose tolerance, ...), such as the absence of correct description of the variability through racial categories, or the independent genetic evolution of the different so-called racial traits.

We continue to speak about white or black Americans, Arabs, Jewish, ... stereotypes by mixing biological and cultural traits and so doing pushing certain economic and socio-political ideologies. We continue to confuse culture and civilisation on one side and genetical inheritance on the other, nation and population. It is forgetting that political oppositions are often the heritance of biological close populations, such as Irish and British, Huttus and Tutsis, Arabs and Israelis, Bosnians, Croats and Serbs. It is forget-

¹ In the New World, colonised by Spain, a hierarchical society was created, where each socio-economic group was defined by "race". More than 15 races were identified with at the top "pure blood" Spanish, these races included i.e. Indian, Barbarous Indian, Mulatto (a mixture of Spanish and African), Mustiza (Indian and Spanish), etc. (Bernis, 2004).

² It is said that the Haitian dictator Duvalier told an American reporter that 96% of Haitians are white, explaining that Haiti is using the same procedure for counting whites as Americans use for counting blacks (Hirschfeld, 1996).

ting i.e. that data relative to polymorphisms of blood groups, proteins or alleles HLA show that Jewish populations are genetically closer to non-Jewish populations of the same geographical localisation than to other Jewish populations geographically further.

If our understanding of past and present human variability has, in the last decades, radically changed, it is on the basis of the scientific progress in genetics, palaeontology, anthropology and ethology, but also (and maybe certainly) on the basis of changes in mentality and sociological modifications. As of then, the anthropologist studies the variability of populations and no longer the one of imaginary ideologies, keeping in mind that populations never stay isolated and that geneflows are constant, one observes clines of gradual variation. The only way to practice anthropology is to study man as he is and not as one would like him to be (Susanne and Rebato, 2004).

Sadly, the tendency to typological thinking pushes too often to neglect the biological variation internal to the population to mainly be interested in variations between groups. However, the large majority of human variation, as well morphological as biochemical, is the one that one can observe within each population. To-day, an anthropological study has not only be performed in a competent way by taking into account these facts but also in a way which is morally justified in a spirit of equality of human rights.

5. Race versus ethnic group

Many anthropologists and geneticists, without neglecting the existence of differences between individuals of the human species, propose no longer to use the term race and to replace it by others such as population of geographical origin, ethnic group, where traits of cultural and social origin are present. The "ethnic" qualification means to belong to a group characterised by its cultural traits and the "racial" qualification by a set of biological traits (morphological, molecular and physiological) used in an historical-natural classification of humanity and supposed to be of genetical origin, although, as we saw, their biological significances are doubtful.

However, it is difficult to separate biology and culture in our species. Ethnicity is a complex mixing of biology, history, cultural orientation and practice (Durie, 1995), language, religion and style of life. We cannot neglect that the concept of race is still used popularly as real, cultural, political and economical and it is misused in many countries where it is giving rise to highly degrading political movements. But, the relationships between science and society are so varied and often so complex that some scientists have responsibility in these misuses. This "scientific racism" has often been documented (Tobias, 2004).

"In general, the term race has been used to classify human groups in function of some morphological traits (skin colour, face morphology, and so on) and the term ethnus to classify them in function of cultural features (language, religion, traditions, and so on), with the shade that, in this case, the approaches should also serve like a reference of identity for those classified. It is evident that the morphological traits of the face, the skin colour, and so on, are self-

recognition approaches, and for that reason, the term ethnus usually includes the race like an additional differentiating approach, what has always created enough confusion" (Bernis 2004). "The ethnicity or ethnic identity usually goes together with the valuation of other societies in function of the dominant norms. When what is own is valued as superior, we fall in the ethnocentrism, that is present among all the human groups without necessarily having any negative connotation. However, multiple examples exist, along the history and in all the societies, of the interested political use of ethnicity and ethnocentrism, that has generated unjust political situations, wars and genocides. The meaning of the ethnic conflicts has been manipulated and exacerbated, by all the implied parts, to justify strategic, political or economic interest that are, in fact, the motor and the backdrop of the conflicts. What has recently occurred in Europe with the wars that destroyed the Yugoslavian Republic, in Africa in the conflict of the Big Lakes, in the Near East with the Palestinian-Israeli conflict, or in Afghanistan are good examples of this" (Bernis, 2004).

The concepts of race or of "subrace", traditionally recognised as a physical or morphological type (often denominated "racial type"), have to be separated from the concept of people or tribe, that has an ethno-political sense or of population that has a political or biodemographical sense (the concept of population is founded on the endogamy and not on biological traits). Many terms, that are sometimes assimilated to infraspecific taxonomical categories, such as clan or tribe, do not have a biological basis but exclusively cultural. As we already mentioned, we cannot mix the terms race and ethnic group, which mean, for the first one, a naturalistic debate and a biological basis and for the second one, collectivities of similar cultural traits (language, religion, style of life, etc.) even if a coincidence can often exist between both, such as in the case of Eskimos, Australian aborigines or Pygmies.

6. The human diversity

Homo sapiens is a successful species in number, but also in dispersion over our planet. We have adapted to living from extreme cold to dry or wet tropical areas, from the coast to high altitudes. Accordingly, *Homo sapiens* shows a real diversity of phenotypes.

It seems evident that all the more than 6,000 million of human beings belonging to the human species are different from each other and that there are not two similar individuals (even for monozygotic twins where some traits such as dermatoglyphes will be different). This is, for instance, easy to observe when one has to find an organ donor to transplant. Diversity is surely a relative concept, which depends not only on the considered traits (monofactorial characteristics, such as blood groups determined by a single gene, or multifactorial characters such as stature determined by many genes as well as by environmental factors) but also on the level of observation (for instance, intrapopulational, that is, inside the populations, or between populations). Moreover, the sources of variation can be very different.

In general, the genetical variation of phenotypes refers to differences between individuals due to genes inherited from the parents, where the environmental variation refers to differences due to environmental factors, such as climate, housing, etc. The main genetical mechanisms at the origin of variation between populations, or inside one population, are mutations and recombinations of chromosomes that introduce some variations, selection, which maintains or eliminates this variation by favouring some genes in specific environments, genetic drift, which creates variation in isolated populations (founder effect), and migrations.

From an anthropological point of view, a population is defined as a group of individuals linked to a geographical territory in a concrete moment of history, having specific matrimonial choices defined by a geographical, psychological or cultural distance. The effective marriages allow the population to acquire and maintain some biological characteristics, possibly different of other populations more geographically distant. If the populations can be largely distant for cultural traits, this is not the case for the biological traits. Human species consists of about 5,000 different populations linguistically defined at this moment (Cavalli-Sforza and Cavalli-Sforza, 1994). Contrary of what was thought a few years ago, the modern techniques based on the direct or indirect study of DNA revealed that the differences between populations are lower than it was thought, considering that the largest part of the human genetical variation is intragroupal more than intergroupal. This is probably due to the fact that visible differences between groups (for instance the colour of the skin or the body shape) are due to a low number of genes and moreover linked to climatic adaptations. These are precisely the kinds of traits used traditionally to construct racial classifications.

Initially, human biological variability was studied through the phenotype, or through morphological traits (skin, iris and hair colour, shape of the nose, stature, body shape, etc.) or later through by means of "classical genetical polymorphisms" (such as blood groups, enzymes and proteins of the plasma, HLA [Human Leukocyte Antigen] system). Between the years 1950 and 1980, the techniques of detection of these genetical markers progressed rapidly (antigen-antibody reactions, electrophoresis) as well as statistical tools, informatics and genetics, allowed to understand, at least partly, the complexity of the structure and functions of the genes. Complex mathematical models on very large databases also allowed to better assess the biological distances between populations, as well as for the traditional morphological traits than for the numerous new proteinic polymorphisms (Bernis, 2004). In this kind of studies, one does not analyse directly the genes (the genotype) but its product (the phenotype), and also concentrates on only a part of the genome (the part responsible of the structural genes) and considers only the variations in amino-acids where not all mutations of exons result in these variations. Thus, these variations represent only a small part of the present variability, which avoid a detailed reconstruction of the genetical relations between populations.

The clear progresses done in the last decades in molecular techniques, such as the technology of recombinant DNA, the cloning of genes, the use of restriction enzymes or endonucleases, allow to analyse other polymorphisms such as

the RFLP (polymorphism in the length of DNA fragments generated through the digestion by restriction enzymes) or the direct sequencing of nucleic acids (through the chain reaction of polymerase, PCR) and they allow to answer to the critics on the study of the previous polymorphisms. From the years 1980 on, it was possible to analyse directly the genotypes of the individuals, and to identify a very high level of variability (Rickards et al., 2003). Researchers have been eager to use the new molecular biology techniques to study ethnic or racial differences in health that are commonly assumed to have genetic causes. Some authors have demonstrated that this assumption is based on confusion between three very different concepts: genetics, race, and ethnicity (Pearce et al., 2004). The lack of major systematic genetic differences between ethnic groups, together with the extensive differences in lifestyle (diet, alcohol, smoking, etc.), means that ethnic differences in mortality and morbidity provide to some extent evidence against the importance of genetics factors and for the importance of environmental factors (Pearce et al., 2004).

The study of fragments of the human genome has revealed that specific or particular genes to a population do not exist and, that a considerable genetical uniformity exists considering the large geographical dispersion of the human species (as it was previously noted, a part of the visible morphological differences are explained by the adaptation to a large range of biotopes). They have also demonstrated that the highest genetical distances are mostly observed between populations not between individuals: about 86% of all identified genetic variation is between any two individuals from the same ethnic group. Another 7% of all variation is between ethnic groups within a "race" – say, between Spaniards, Irish, Italians and Britons – and only 7% of all human genetic variation lies on the average between major human races such as those of Africa, Asia, Europe, and Oceania (Lewontin, 1991). This limited genetical diversity of human beings indicates a rather recent and common origin of our species (Wilson et al., 1985), evaluated to happen 100,000–200,000 years ago. The evidences coming from the analysis of mt DNA (mitochondrial DNA) and from nuclear loci, including those linked to the X and Y chromosomes, confirm this recent origin as well as an African origin of man.

7. Genetics: the new research racism?

We saw that anthropology changed totally of mentality and that, in our search for the origin of variability, we discovered that the main variability is in fact lying inside each population: in terms of nuclear DNA, 90% of the diversity is attributable to differences between individuals of the same geographical population and very little of the overall diversity attributable to interracial differences, the same is true for mitochondrial DNA where 94% of the variation is observed inside the same population (Melnick et al., 1992).

Anthropologists try to distinguish the causes of the human variation in two categories, the genetical variation and the environmental one. For human beings, culture is an important source of environmental variation. It is, however, difficult to separate the genetical and environmental sources of hu-

man variation: the problem is indeed that parents and children share a genetical transmission but also an environmental and cultural transmissibility. If genes are the units of biological information, other units of cultural information are the memes. They diffuse through cultural vectors, natural selection, migrations and cultural drifts.

It is also important to distinguish the variation inside the human populations from the variation between the human populations. In the analysis of the interpopulational variation, if genetic flow between different populations has a homogenising effect, selection and genetic drift maintain the differences. Selection will favour different genes in different environments (typical examples are those of the sickle cell anaemia and the lactose tolerance). Genetic drift is at the origin of genetical differences between populations of limited dimensions, at random changes in the frequency of genes will occur creating rapid divergences.

The actual genetical variation reflects the history of migrations and of development of human populations from the African origin to the expansion of modern human beings. The genesis of human variability can be studied through genetical markers (Harpending et al., 2000), but this variability does not imply a racial separation (Foster et al., 2002).

We have already seen that the largest part of the genetical variation in the human species is present inside the populations, the human inter-populational variability is also lower than in other species such as chimpanzees. This observation corresponds to our knowledge of the human evolution: it learns us that *Homo sapiens* being rather recent, about 200,000 years, that natural selection and genetic drift did not have time to result in large differences such as in older species, i.e. chimpanzees. Moreover, genetical flow between human groups is an important fact of the whole human history eliminating genetical differences between groups.

The analysis of the genome is one of the emblematic progress of sciences, allowing to decorticate life and somewhere to demystify life. To know the sequence of human DNA is a determining factor to understand human life and human evolution. The consequence of these studies will be the analysis of the genetical similitude between human beings and between different species. This allows already to say that human being and chimpanzee have a genetic similitude of more than 99%, human being and mouse around 90% similitude.

However, these little differences between great apes will be very interesting to see what could be qualified as specifically human. Which genetical accidents have allowed the human history? It will also probably feed some philosophical debates.

One evidence of the genetical analysis is already that the genetical pool in Africa is much more variable than elsewhere: the variation outside Africa represents only a part of what can be observed in Africa. Somewhere, we can say that genetically speaking all human beings are African.

At ethical levels, the genomics in medicine and in biology is bringing a danger, indeed, it puts the accent on the human genome in the media, the genetical successes and the medical genomics giving the idea of an almost total genetic determinism on diseases, and even on behaviour. If in the 1980s, geneti-

cists had to defend the idea that the human development was also genetically influenced, to-day one has to insist that the environmental influence also exist in the development of diseases and of behaviour.

Techniques of modern genetics allow to decipher progressively the human genome. Genetic mapping, in the sense of locating a gene on a chromosome, occurred as early as 1911 for the gene of daltonism on the X-chromosome and 1968 for the gene Duffy on the chromosome 1. Since 1973, "Human Gene Mapping Workshops" occurred to actualise human genetic maps: this information was well known in the scientific world and published in books first, at informative level afterwards.

Mapping the whole human genome is an idea which proved already in the 70s: "mapping the human genome is a challenge to the human intellect". But, technological innovations allow soon sequencing DNA bases and DOE (Department of Energy, USA) will propose in 1987 the challenge to sequence the total human genome. Already in 1988, the NIH (National Institute of Health) will officialise this programme under the name of "Human Genome Project" directed by J. Watson and in 1988 also a Cold Spring Harbour workshop creates HUGO (Human Genome Organisation), an international organisation coordinating research at this level. If the United States is participating largely to this project, the United Kingdom, Germany, France, Italy, Canada and Japan are participating also: genome centres are realising physical and genetical maps as well as sequencing. The budget is estimated to at least 2.5 billion Euros.

HUGO, by localising and sequencing genes of congenital diseases, is promising future considerable medical progress, both at diagnostical and therapeutic level. It will allow indeed diagnosis and gene therapy of monofactorial diseases (linked to only one gene). But, multifactorial diseases will be implied also such as cancer, for instance.

Genetic research will undoubtedly lead to important discoveries and new forms of treatment. However, such benefits are a long way off and require large investments with potential benefits for a few high risk individuals. This leaves little to promote the health of the majority. The emphasis on genetic explanations for population differences in health has also led to controversial instances of "gene hunting" by multinational institutions. The affected countries may have inadequate or non-existing legislation on ethical and social protection for human subjects of health research in general, or genetic research in particular.

The genetical analysis developed very rapidly. However, it is only recently that molecular biologists realised that a huge variability exists inside each human population. The human genome cannot correspond to one person, or some people, otherwise the molecular results could appear as racist, because it is typologists. HUGO decided in 1994 to create another programme HGDP (Human Genome Diversity Project) to understand this variability. For many anthropologists, HGDP is, however, associated to some ethical problems such as the choice of the populations and their representativity.

The HGDP created even anxieties in some of the studied populations: studies of genetics of population would have to answer indeed, as all "experimental" studies on human beings, to criteria of free and enlightened consent. Individuals must be informed of the goals of the study they are participating

in, they must be free to participate, they must have free access to the results, economical consequences must be defined in terms of marketing of the genetical data banks or of exploitation of some individual or collective ownerships (Susanne et al., 2003a).

The non-coding DNA part being large, the human genome project has also been criticised by the fact that the total sequencing will be for a large part of low functional interest.

However, the ultimate goal of the project to obtain a full sequencing and the interpretation in functional genes and in a genetic map progressed dramatically: many biochemical diseases are mapped, their genetic origin better understood, diagnosis of carriers better managed, pre-implantatory diagnosis started, genic therapy also started. It also brings human genetics and population genetics in the public debate. Which tests to practice? In which conditions of confidentiality? How far to go in the genic therapy? Answers are surely possible, but they must no longer be given by scientists exclusively.

These studies lead also to imply studies of the variability of the human genome in reaction to vaccination, or also in positive and negative reaction to medication (a topic called pharmacogenomics). It could lead to personalise medication after a genomic analysis of a patient.

The genomics will lead also to give a larger role to the genomic therapy, the utilisation of cloned organs or of animal organs in xenotransplantation.

Practically all new realisations of the human genome analysis have ethical implications. How to use the genetical analysis of a person? Can this information influence his assess to an employment? Are the insurance companies authorised to use this information? Is the genome of a person only a private thing, or can it be sold? Must the results receive a guarantee of anonymity?

The case of Iceland is exemplary: on December 17, 1998, the Iceland Parliament "sold" in a sense the genome of Icelanders and gave its agreement to an American company, DeCode Genetics, for the exploitation of their medical bank data, genealogical archives and DNA databank of Iceland's population. About 3,000 Vikings and some Irish slaves populated the island between 870 and 930, they remained totally isolated practically to the Second World War, practically during 50 to 60 generations. Through this isolation, Icelanders are characterised by a rather limited gene pool, interesting from a genetical and medical point of view. To establish the whole databank would cost 130 to 244 million Euros. Are in favour of this project people thinking it could contribute to the study of congenital diseases. Opponents question the lack of democracy being at the basis of this decision, on the lack of free and informed consent of Icelanders and the lack of anonymity of data banks. The project implies also a private company receiving a monopoly over the whole genetic data and the financial profit.

A more or less similar project exists for the Mormon population of Utah headed by Myriads Genetics, who identified and patented for instance the gene BRCA1 responsible for breast and ovary cancer.

Private genetical research is more developed than the public one and 80% of American geneticists is working for private companies. This tendency has to

be questioned because it influences the orientation of the research and it limits return of profits to public institutions or to the implied populations.

In the case of the HGDP project, some South American tribes are even speaking of "bio-piracy". Also in population studies, free and informed consent must be secured: aims and objectives of the surveys should be clearly explained. Of course, the results could not discriminate the participants to these studies. One would not also use the results for pseudo-classification of populations. Results would be communicated to the individuals.

8. The actual contradictions

Happy end of this story on race? It should be but, up to to-day, prejudices concerning morphological variability are most persistent. "It certainly can not be denied that racism and the social construction of 'races' continue to exist. The widespread consensus that those who look different are minor or superior seems to be ineradicable, and regrettably increases lately" (Roede, 2004). This could be linked to some economical factors.

The idea that the West has triumphantly steered the ship of the entire human history into the safe harbour of a liberal economy is directly contradicted by the environmental destruction, linked to the depletion of the key natural resources and to the exponential population growth. *Homo sapiens* has been displaced by *Homo economicus* (*universalis*) (Crutwell, 1995). Today's world is now indeed a bourgeois global village economy, but which feels it has to be less arrogant. Let us agree with Vaclav Havel: "Many Europeans and Americans today are painfully aware of the fact that the Euro-American civilisation has undermined and destroyed the autonomy and singularity of non-European cultures. They feel it was their fault, and thus feel the need to make amends through a kind of emotional identification with others, by accommodating them, by trying to ingratiate themselves, by longing to 'help' them in one way or another. To my mind, this is a false way of going about it that can lead to further unhappiness. It contains within itself – albeit in a hidden and somewhat negative fashion – the same familiar feeling of superiority, paternalism and fateful sense of mission to help the 'rest of the world'. It is, again, that feeling of being 'the elect'. It is, in fact, colonialism inside out. It is an intellectual dead end".

A new world will soon or late reject the economical "wonderland", as the cause of environmental destruction, resource depletion and population explosion, co-carcinogens of the globalisation.

The solution is surely not the planks of successful election platforms: an orderly decline in production and consumption, a deliberate decrease in foreign trade, an intentional drop in living standards are however the undoubted central measures we will have to take (soon or late).

It will also have to save the important social achievements of the West during the 20th century: abolition of slavery, legalisation of trade-unions, universal suffrage, free education and health-care, welfare legislation, adult literacy, freedom of speech and association, democratic rules.

The differences between North and South continue to increase. But, it is difficult to imagine that the current politics of mondialisation and globalisation will continue with an increasing tendency to social exclusion, violence, degradation of the environment, cultural and political underdevelopment, a situation which not only is immoral but also inhuman. The populations which are obliged to live in unfair conditions, devoid of all that they know is existing in the rest of the world, will not remain forever without protesting.

For instance, the demographic explosion has numerous consequences of which the degradation of the environment and the quality of life, as well as a diminishment of individual freedom. At ethical level, our churches and societies would have to understand also that to procreate a human life is perhaps less essential than to propose a destiny which is not a position of underdogs and/or of men without respectful life. How can we consider indeed the big favellas around the megalopoles of South America for instance, and the situation of these neglected children, drugs slaved, prostituted and even "res corporalis" for a traffic of organs.

Drastical efforts of dimension reduction of populations should occur to guarantee future generations an acceptable quality of life and a sustainable development (Brundland report, 1987, *Our common future*).

Sustainable development (Hens and Susanne, 1998; 1999; Susanne and Hens, 1998) must necessarily include an ethical aspect and must be analysed on a world-wide view. Moreover, the consequences of sustainable development have to be culturally acceptable in order of it to be effective (Schütz, 1990; 1996).

Solutions are possible where everybody will have to take part, citizens by reducing their consumption, engineers by proposing more ecological techniques, industries by investing in more environment respectful productions, politicians by using tools (laws, norms, taxations, ...) favouring a more "green" consumption. Sustainable development can occur only with the participation of the whole society.

Another consequence of demographical pressures is the migratory phenomenon. Of course, migrations occurred all over our prehistory and our history, they create diversity and mixed populations but they are perhaps to-day an answer to crisis situations. Of course, today the migratory factors are often complex and include economical, ecological and political motivations (war situations, absence of democracy, ...). Moreover, our world became "a global village" where education and televisual information diffuse and idealise images relative to "rich" societies, and where these images stimulate the migration of all those who do no longer desire to live in the conditions of poverty of their home country. But in the wall between the two worlds, fissures are appearing more and more and are larger and larger. Migrations are marked out most often on a clandestine way flooding clandestine networks of workers. The growing disparities between economic, social and demographic conditions in South and North, and East and West, provide the context for future mass migrations.

"The gap between the North and the South continues to increase, dragging along in its wake the human misery that would only find a solution through international initiatives having important financial implications" (HCR, 1991). However, quite curiously, the essence of political discussions consist of discovering how a repatriation can be done in a "humanitarian" way, by respecting

what the Red Cross and the High Commissioner's Office to the Refugees call in an elegant (and hypocrite) way the "threshold of humanitarian tolerance".

At another level, the politics of the UN High Commission for refugees is proposing to the governments to be less generous to asylum seekers who did not meet UNHCR criteria, the reason would be that it might divert efforts from "real" refugees. The UNHCR would have better to question on the viability of their definition criteria and on the gap between the international policies and the world's 80 million migrants (1.7% of world population). The UN Convention definition does not correspond to the overwhelming majority of the asylum seekers, "even though they are forced to leave their countries by war, famine, economic pressure, ethnic persecution or ecological catastrophe" (Castles, 1993).

If it is clear that the essential cause of migration is economical of origin, the world is now becoming a "global village": large diffusion through TV for instance of images results in an attraction to the Western world seen as a kind of Eden, new needs are created in young people which can not be answered permanent jobs being very limited. Improved education but few jobs for graduates lead to a "brain drain". Migration requires resources, both of finance and cultural capital, it is not the most impoverished people, who are most likely to migrate. Young people can see what is happening elsewhere and do not anymore want to live as underdogs. Migration flow is however not a solution, resources flow would be.

A racism develops with immigration, as well as the emergence of neo-fascist or extreme right parties using the hostility towards migrants to attract a popular adhesion. As migration occurs, a "European racism" developed that is likely to have a major political and social impact (Balibar, 1991; Solomos and Wrench, 1993). Academic studies but also the popular and serious press addressed aspects of the question. Racism and hostility to migrants growth with neo-fascist and right-wing political parties using immigration to attract support. In i.e. the UK, France, Germany, Italy and Belgium, ..., the North-African or African immigration could have a political impact which is not neglectable.

In France, the main characteristic is the rise of the Front National (FN) from a "groupuscule" in its creation in 1972 to a party obtaining about 15% of the votes and winning some city elections. The FN mixes racist opinions (of exclusion for instance) to some populist features, to some anti-Semitism or even to the so-called "revisionism" (denying the genocide of the Jews or the existence of the gaschambers) (Wiewiora, 1993). It is coupled to a way of life where solidarity networks, traditions and community relationships are breaking up.

Even if national political differences exist, a number of trends have a European-wide basis: transformation of the social infrastructure, economic stagnation, recession, welfare state contraction, "racialised" issues such as employment, housing, education and law, isolation and alienation of second- and third-generation descendants of migrants increased (Heisler, 1991).

The paradox is that modern European society opens doors to the clandestine circulation of foreign labour and wants, at the same time, to restrict it. Amongst politics which are susceptible to stimulate racial reactions, we can cite:

- politics which lead to the employment of clandestine workers whilst threatening the general labour market;
- politics which limit the civil rights whilst worsening the problems of public order;
- politics which drag along the decline of syndicalistic movements of solidarity and which open a social space to racism.

If, as we have seen, a form of racism was developed in European societies in relation with colonialism and the spirit of white superiority, in turn, since 1945, Western Europe followed an internationalistic and antiracist political line, at least where the left parties are concerned. However, the 1970s have seen a regain of racism against immigration in general. This attitude is independent of the skin colour or the geographical origin: there is practically no difference between the attitude towards Italian workers in Switzerland, Turks in Germany or blacks in the UK. At the end of the 1980s, a more pronounced discrimination appears: the intra-European migrants are much better accepted than non-European migrants, phenotypically different and/or of Muslim culture. With the collapse of communism, the anti-Jewish and anti-Gipsy racism also regains territory in Eastern Europe.

The rights of man, and their respect, are becoming evident in our actual world. Even, if sometimes it took time – i.e. the Catholic Church made the allusion to the universal declaration of rights of man only in 1963 in the encyclical *Pacem in terris*, even still with some objections and reserves. In many countries, and in most Islamic countries, the rights of man are still a fiction: with nuances between countries, we can only observe the restriction, or even the interdiction, of rights of free expression, of meetings, of manifestations, of syndical rights ..., the political police being most of the time omnipresent.

Let us notice that our period is troubled, in the sense that confusion of values is present in our societies, that our age develops anxiety and irrationality, that our secularised societies are still religious (perhaps without realising it really, see the weight of religion in the European constitution, or the positions taken in questions of bioethics). Our society develops tolerance but it does not mean that “everything is just as good”: it means that tolerance must be of course bilateral and that minority fundamentalist groups present in each monotheistic religion may not represent the whole of these religions and may surely not impose their intolerant positions to the whole society. Fundamentalism represents the manifestation of a political project trying to impose to a society, from the individual person to the state, values resulting not from a democratic consensus but from a rigorist and moralist vision of religion. The “enemy” is, of course, not the religion, he is not Catholic, Protestant, Jewish, Muslim, he is whom is using the faith of others to take power. The enemies are those who instrumentalise God, who make a commerce of it, who pretend to be his representation on earth; enemies are all integrists, who cannot accept the pluralism of ideas and the diversity of life conceptions. However, the majority of citizens has the same wish of peace, of progress, of ethical preoccupations and of secular democracy. Freedom of expression is a nightmare for all integrists of the three monotheist confessions, Catholic-Protestant, Jewish,

Muslim. These integrist movements are even speaking of racism (antireligious racism) each time that religions are criticised, it is a strategy to limit the freedom of expression. Humanism must struggle against racism but must struggle also against violence, sexism, intolerance, even when it is of religious origin. For all integrists, the divine law is higher than the human laws, the result is to despise the democratic and humanist ideals. Integrists of Christian, Jewish and Muslim culture give the impression of an open hostility between their movements but in fact, financial relationships exist and all refuse the secularism (Fourest and Venner, 2003). Our societies must remain secularised and neutral and not participate to a new kind of racism. Schools, for instance, are submitted to "community pressure" with refusals of some courses such as biology: this results sometimes in the impossibility to teach scientific arguments related to variability inside human populations, the origin of this variability in terms of human evolution and even the history of human populations (Susanne, 2005). It is urgent to reaffirm rationality and secularism, which can guarantee freedom: it is not a "religious racism" to promote rationalism and to struggle against fundamentalism.

Metaphysically, the foundation of morale is no longer religious. After the century of Enlightenment, and now humanism, human beings are taking the leading place in human culture. It is going so far that God begins to appear as an idea of human beings, that he is supposed to have created.

Refuse of authoritarian arguments and freedom of conscience result in a humanisation of the revelation. From bioethics to humanitarian help, human beings appeared as sacred.

9. Individual autonomy

The ancient conception of "they are not like us" often becomes "they do not want to be like us". Very subtle, the new European right politics has recuperated the concept of "right of difference" that humanist movements had used to defend the human rights of certain prosecuted populations. These right political movements even transformed themselves into defenders of ethnic pluralism to justify discriminations and expulsions.

By pointing some immigrants as scapegoats, new forms of racism are insinuated in our societies and receive, by votes on extreme rights parties, a democratic support which, paradoxically, introduces the germs of denial of democracy. This situation is part of the phenomenon of frequent exclusion in our actual societies: racism "ethnics" exclusion and social hierarchies. Compared to violent forms of racisms, this is a "soft" racism in development.

Racism, affirming ethnic inequality, often exists in daily life under the form of multiple exclusion, inferiorisation and marginalisation acts as well as "legitimate" attitudes through these supposed differences. These attitudes can be subtle and accompanied by denials such as "I am not racist, but ...". However, as long as racism is denied, an antiracial campaign is not considered necessary: racism is considered being present only in the extreme right parties whereas, in other movements, it would be only a matter of discrimination or xenophobia.

The tendencies to racism and exclusion are probably so present to-day that integrational politics could not suffice any longer. The assimilation (French model) or exclusion (German model) politics have no effect any more and ethnic minorities, firmly established and socially anchored, await no more than a cultural pluralism (Castles, 1993).

"In a variable degree, all societies are multiethnic and with their own history of relation/domination of some ethnic groups on others; this conditions their current situations of coexistence or conflict, the perception of some groups by the others. In this sense, all along the human history they have formed two main sectors of population: those that move to geographical and culturally different places, as conquerors, colonizers or emigrants for economic reasons, and the indigenous, conquered groups that remain in the lands of their ancestors" (Bernis, 2004). "The indigenous groups gather about 300 million people at the present time, and they live as minorities in the lands of their ancestors conquered and colonised by populations of different ethnic and geographical origin. In 1920, representatives of these groups began a long fight for the recognition of their rights, their patrimony and their cultures. In 1977, they were recognised by the United Nations and other international organisms. The period between 1995 and 2004 was established as the international decade of the world indigenous populations, with the aim of "(...) the promotion and the protection of the rights of the indigenous populations and their capacity to choose the options that allow them to preserve their cultural identity, without stopping to participate in the political, economic and social life, with a full respect for their cultural values" (United Nations 1998). This growing migration escaping from the misery produce some nuclei of ethnic minorities coming from poor countries, with a quick demographic growth and, frequently, with colonial links with the countries of destination. These minorities, besides being physically and culturally "different", frequently claim their rights to maintain their differences and their ethnic identity, and this exacerbates the outbreaks of racism and xenophobia, more and more frequent in the current world" (Bernis, 2004).

In the past, races were supposed to protect their biological purity, to-day, each culture is expected to preserve its identity.

Let us be suspicious of all forms of philosophies of exclusion, nationalism and religious fanaticism which attract fear, aggressivity and hate. For all fascist regimes, and more generally dictatorial regimes, feelings are more important than intelligence because these regimes ask adhesion without discussion and reflection to values and/or leaders. Rationality and critical thinking, which allow a distanciation to manipulatory ideas, are in these circumstances natural enemies. We need to continue the eternal fight of reason. We might not be entirely free and equal, but let us have at least fraternity which should command politics and international economies.

Human beings often fear their freedom: it is a tool we can not bring under perfect control. We prefer often stereotypes and ideological totalitarian remedies to calm our feelings of inferiority and our metaphysical anguishes. Man has to be aware of his animality to take "his own animal" in charge.

Let us remain careful: in the present context of "each for himself", the racism of the ethnical exclusives is gaining again power. Nobody wishes an

Europe where the national (regional) cultures and languages would disappear in favor of a standardisation ways of life. But, it is clear, however, that the solution is to promote the behavior of dissociation from the local codes to a more community code. Cultural development must be dissociated of the ideology of "blood and soil". To have roots must be associated to individual autonomy.

All this has anthropological implications, we can not work on a uncontrolled way, the public opinion has the right to judge the positive or negative side of our research. In anthropology, our history being what it is, we must be double careful.

For anthropologists, racial classification is reflecting a social patterning rather than biological differences. Racism, and its prejudice, is certainly a reality, but not rooted in a biological reality. The big differences among human populations are the result of culture.

Today, human beings are no more considered as the centre of the world, the cosmos is becoming the centre, which has to be defended against human beings. The biosphere is receiving an intrinsic value, higher than the value of the species *Homo sapiens*. A crisis is created and the carrying capacity of the biosphere is forcing us to find a new relationship between Man and Nature. Human evolution is a history of symbiosis, control and later on domestication of Nature, it is also a history of violation of Nature exacerbated by the exponential development of technologies and of population densities.

In anthropology, we consider too often Man as an island outside of Nature; we have perhaps the tendency to think of him as being above Nature because he developed original qualities and because he succeeded in the conquest of Nature. In fact, we have more to consider anthropology in terms of ecology, to place anthropology inside human ecology. Man is not opposed to the Nature, he is autonomous but dependent on it. We must give an ecological thinking to anthropology.

10. Conclusion

In anthropology, we need to objectively study human variability; from this point of view racial classification, proposing pseudo-solutions to non existing problems, is a loss of energy. Moreover, it is creating a mental predisposition which could be a door open to racism.

Contrary to what our common sense says about the existence of some great human races, based on traits perceived as essential (i.e. skin colour), this notion has no biological validity and the observed differences of traits are neglectable compared to biological differences between individuals of a same population. To divide human populations in a certain number of groups gives rise to arbitrary divisions and not natural ones. Populations are in fact local groups, in continuous change, of bio-cultural unities. The human species forms a single continuum or clines, following geographical gradients, in function of ecological barriers or gene flow and where the only real barriers are of cultural nature (linguistic, behavioural, vestimentary, ...). To-day, the notion of human race has lost all scientific

basis and is politically unacceptable. We do not have to imagine, however, that knowing that if race is a myth it will automatically eliminate racism.

The 19th century justified oppressions and discriminations by trying to associate them to biological notions: in Europe, the important Jewish minorities had to be different than the Christian majority, in America, the black minorities had to distinguish themselves from the white population. In both cases, centuries of discriminations had to be rationalised: the oppressor had to be different from the oppressed. But, still in the 20th century, the distinction between racial and racist studies is maintained; it is linked to the history of anthropology and is written as a watermark in the debates concerning eugenics or the inheritance of intelligence.

In short, the 19th and 20th century were accompanied by profound conceptual changes: in the 19th century, the progress in biology undermines the anthropocentrism and in the 20th century, the progress of social anthropology undermines the ethnocentrism. "Is man unique?" is a simple question, central to biological anthropology, and yet at the origin of many false reasoning. The anthropologist must reply that man is indeed unique, as all other animal species, and in the same sense as a chimpanzee is not a gorilla and a dog is not a wolf. A minimum of characteristics distinguishes us. And yet, the anthropologist also needs to relativise these distinct traits: we respond to the same biological fundamental principles as do all other animal species, all mammals and in particular and more specially primates. With the chimpanzee, for instance, we have 99% genetic similitude.

Already since Charles Darwin, species are considered as different, without one being "better" than another: they are not hierarchised and man is thus not at the summit of a zoological hierarchy. Anthropocentrism is put in a bad light and ethnocentrism will follow soon with the works of, e.g., Franz Boas.

The myth of the inequality of races is a political vision that rests on doubtful scientific data. It is put back onto the agenda by an ideology of extreme right and by ethnocentric nationalisms. The history of this alliance between extreme right and manipulated scientific concepts is long and, sadly, rich, as we just saw. The hatred for the other and the egoism provide always performing engines to demagogues.

Biological anthropology, as social anthropology, has been misused at different periods and in different contexts to justify the colonial exploitation, to fortify a nationalistic ideology, to control indigenous populations and thus to support the exploitation of man by man. But, anthropology can also serve to facilitate an educative system in a multi-ethnic context or intercultural relations in a global economy market. It can thus promote justice, equality and human dignity.

The astronaut can see that the world form a single globe wherein the astronomer and the geologist can describe its origin. We live more and more in solidarity in a single "global village": biology of the 21st century can no longer serve as caution to racism which, despite its scientific allegations, is essentially of social nature.

It is important to mention that we certainly can recognise the differences between populations but that these are gradual and according to geographical gradients, that they do not imply judgements of values and that they are

relatively less important than other differences observed within each of them. As a consequence, the notion of race has, to-day, lost its scientific value, even if it can conserve a signification of social identification. The exact position to racism is not to deny the differences between populations, which do exist, nor to deny the need of man to identify himself to a group, which is an undeniable need, but to assure that the diverse groups of people have the same access to resources, that no group as such, nor any individual, be discriminated.

The knowledge on the genome is becoming more and more a basic element of the relationships between people and institutions, tribunals, illness insurance, ethnic identification, and so on. This situation, besides the updating, in the daily language, of the concepts of race, ethnos and other derived words, urgently requires a wide debate among the civil society, the academic world, the legislators and the social and political institutions (Lewontin, 2000). As anthropologists, we have the ethical responsibility of actively participating in this debate, to lead it, to let know human "races" are not a biological concept.

All the results show that the populations do not differ through the presence of specific genes, that they are characterised by the same genes but present in different frequencies and that the genetical variation inside the human group, eventually classified as "race", is much larger than the variability observed between different "races". The spectacular progresses in the knowledge of the human genome confirm these observations: any trial of classification (and of course of hierarchical structuring) of our species in race or subspecies has no biological meaning. Such Bernis (2004) mentioned "in any case, the fundamental contribution of the study of the human biological variability does not consist in classifying populations than in establishing affinities between populations, in reconstructing the history of populations and of the ecosystems in which they were living, in identifying their migrations and their fusions: in other words, to understand the history of the 'racial' integration which is finally the history of humanity" (Dyer, 1971).

The information contained in the DNA is only a guide for the final phenotype and codes a complex plastic system. The term ecosensitivity is often used to express this plasticity, which depends on the intensity and duration of the environmental stimuli and which shows individual, sexual and ontogenetic variability. This ecosensitivity is expressed in tendencies known as secular changes: they are fundamental changes in the development and growth patterns in European populations, with earlier sexual maturation (about 4 months in each decade since 1850), increase of height (about 1.5–2 cm in each decade since 1850) and changes in the BMI and body fat. These secular changes are linked to changes in life conditions (nutrition, hygiene, control of infections, reduction of physical activity in children, ...).

"In any way, the fundamental contribution to the study of human biological variability does not consist in classifying but in establishing population affinities, in reconstructing the history of human groups and ecosystems that they have occupied, in understanding their patterns of development, of reproduction and of ageing, in identifying their migrations and the constant fusions of their genotype complexes; in summary, in understanding the history of the racial integrations that is the Humanity's history" (Bernis, 2004).

Being different is in our human (and even animal) nature, being different is not a sign of inequality, the large majority of differences being within populations and not between them.

We are now 6 billion people, all different and all rich of these differences. Why would homogeneity bring us more happiness? Humanity is solidar of these differences and tolerance must remain our leitmotiv: tolerance is not only a cultural and philosophical topic, it must also imply the respect of biological differences.

“Fear is ignorance” said Ghandi, let us try to better understand our differences, they will only seem more minimal, worthy of scientific studies but unworthy of disputes and conflicts. Manipulations are not only genetical, they are also in the verb.

We must be suspicious of manipulatory discourses on the return of inequality of races. Let us continue the discourse of education being the only tool to avoid prejudices and remain proper and free man.

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