From land to a simulacrum world; An anthropological essay on the history of an agricultural geo-policy: the elimination of communitary land use systems and its ecological, socio-cultural, psychological and political effects.

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Abstract: Both the individual, private, and the collectivist appropriation of land, territory, natural resources, are not a general rule of human cultures. On the contrary, through human species history, the communitary land use systems have been the most widespread ones. They are based on the natural right of each individual to use land and natural resources in order to survive and live. Land and resources use may be individual, familiar or collective, but land is a common space. Although, in these systems, it have been always accepted that individuals or family units use as their own some land for habitat, vegetable gardens or agricultural fields.
From an ecological point of view, these systems have several advantages. Most territory has no fences, allowing free movement of wildlife and people; resources are used principally in an extensive way; and different land uses tend to be adapted to micro-ecologic features of each territory' portion. This does not mean that, in many cases, human groups don't erode or destroy communitary ecosystems. But general tendency is to an adaptation to ecosystem' natural habitats. In fact, presently high biodiversity ecosystems are mostly located in areas where communitary land use systems still exist, as it is the case of tiger areas in India, wolf ones in Portugal or lion ones in West-Africa.
From a social point of view, those systems do also have several advantages. Each individual, family group or a whole community may survive by themselves, and do not depend on external factors to achieve it. Food, water, fuel, building and tools' materials may be freely collected or produced in the landscape, what allows a large food, energy and habitat autonomy to each individual. Harder tasks use to be made collectively, as well as common infrastructures. This does not mean that such human groups tend to live in an isolated way, but that their autonomy is ensured.
A deep change on land use systems happened in Ancient Rome, when slavery *latifundia* system evolved from former informal land individual appropriation, until the institution, in 111 B.C., of a new legal figure: private land property (*lex Thoria*). Even so, most European territories remained communitary until the beginnings of Industrial Revolution. First in England, after in France (where modern private land property had been invented and defined by jurist Pothier in the triptych *"usus, abusus, fructus"*), then spread globally by colonial expansion, this way of social appropriation of land preceded, everywhere, industrialisation and the formation of mass production and consumption societies. The reason for this was clearly expressed in 1793 by French Conventioneer Delacroix who declared: *"If we give the land to the people, we will not have arms"* [for industry and agriculture]. Progressive elimination of communitary land use has been a strategic way to deprive masses of people from free access to survival resources, impeaching them to cultivate land, graze cattle or collect food, fuel and materials in the natural landscape. Leninist state, collectivist property achieved the same goals by a similar way, based on David Ricardo and Marx rent theories. Both systems caused the

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hugest mass migration of human history, as new proletarians were forced to migrate from countryside to the new growing cities, soon converted in present mega-polis. This implied also an intensive exploitation of natural resources, to maintain huge urban populations and industrial grow. Such strategy was aimed to build up techno-industrial mass production and consumption societies as, since 18th century, such type of progression is valuated as a positive will for humankind.
As masses became deprived from free access to vital resources, they became dependent on the diptych work (as an abstract activity independent from personal needs or wills) and consumption in order to survive, fuelling by such dependence industrial production and consumption, and, so, capital growth. Also, by such process, money became the universal abstract merchandise from which most people became dependent.
But such dependence does not explain by itself the mass consumption growth tendency of such societies. In fact, mass dependence, production and consumption may be linked, but the tendency to mass consumption growth is linked with more complex factors. The human attachment behaviour system, which is also common in many other species, has been also deprived from its natural goals, which are mostly living beings, natural landscapes and other human beings that ensure survival and attachment behaviour system homeostasis. As a consequence, boredom became massive. Attachment behaviour tended to create links with urban minimal biodiversity environment elements, which are mostly artificial and inert objects, images and sounds. This began a vicious spiral as natural attachment behaviour can't plenty achieve its goals in such environment, fuelling overgrowing consumption of objects, images and sounds. Moreover, competition for survival in such social structures also corrupted a large part of human intra-specific attachment possibilities. By this manner, dependence, work, money, consumption, competition and industrial and financial capital growth became a total social fact, which tends to dominate all spheres of human life. In addition, mass dependency favours mass growing infantilism, and so favours manipulation and political, local or global, totalitarian systems, even under parliamentary democracy forms that respect basic civil rights.
By the same causes, massive exploitation of nature became an intrinsic need of such systems, to fuel its ever-growing intrinsic needs. Furthermore, use of land and resources became dependent on such socioeconomic and mass production factors, instead of being adapted to each ecosystem' features and carrying capacity.
Present ecologic and socioeconomic disasters point out to a global need of changes on social production and consumption systems. But such changes can't be achieved, most probably, without a change on land and resources appropriation and use systems. Although, present urban or peasant political wills keep being orientated for individual, state or collectivist appropriation of land, maintaining the above described vicious spiral. On the other hand, global human overpopulation discourages possible attempts to restore communitary systems, as a massive migration to natural or agrarian landscapes could cause a faster ecological disaster than the one in course presently.

Key-words: *land use systems; communitary systems; land property; industrial civilisation; ecology; human evolution*

I

Professor Pierre Coulomb[2] used to begin his agricultural policies' chair dissertation on land property systems with a clear sentence: *"Land property is an abstract concept, as we may say that it is neither natural nor logical that someone says that a part of planet earth belongs to him"*.
Many economic policies of 19th and 20th centuries are based on wrong interpretations of evolutionary mechanisms of natural selection, stating that competition, and the consequent imposition of the strongest over the weakest, shall bring social abundance and progress for all[3]. Also, both in Capitalist "liberal" and in Leninist theories, domination and intensive exploitation of nature by human work are the way to reach those social goals.

II

Living species and' Primates territorial behaviour; Ecosystems' network

However, scientific ecology shows that nature works' on by synergic systems more than by competition based ones. Living systems are a network of huge complexity, where each species or living being have complementary and interdependent functions. In what concerns territorial behaviour in particular, we know that even highly territorial animals, like tigers, wolves or lions, have a variable territory representation. Not only it changes in space and time, but also attitudes towards intruders or passengers of the same or other species vary in function of synergy, association, attachment, alliance, mutualism, symbiosis, interference, competition, parasitism, predation or indifference factors that may even be imponderable.
Of course, any animal nor living being have a territorial behaviour orientated to exclusion, as a lonely animal without links or vital resources can not exist, and fixation on that kind of behaviour would be energetically unsustainable. The single vision of a piece of nature is enough to understand this evidence, as animals and plants of all kinds live, move and develop their activities in the same area, most of the time in a peaceful way, just punctuated by conflictive, ritual-like symbolic confrontations, deadly predatory moments or even quite rare violent fights.
In very social species, like primates, this common relationship with space is even more evident. Group association brings to each individual higher protection against predators and weather conditions. It also insures survival to very young, very old or sick individuals by attachment and solidarity links. It increases the capabilities to find vital resources, and makes possible synergies among each others skills. Techniques and knowledge are shared in the group, and are developed through time and from generation to generation. For instance, we know that in Rhesus Macaque societies each individual deserves his own vital space, which do not have a fixed radius around his body[4], nor is exclusive of intrusion or contact with his companions. But the whole space and territory is shared and used by group members and other local species as a common land, without purpose of neither abstract nor active appropriation. Space and

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[2] Pierre Coulomb (1937-1995), Professor and researcher on agricultural policies in Paris and Montpellier (France).
[3] Very differently, Darwin pointed out that *"all organised beings try to multiply themselves in a geometric progression; each one of them, in some periods of its life, during some seasons of the year, during each generation, or in some intervals, must fight for existence and is exposed to big destruction. But … war is not incessant in nature ... and the ones who survive and multiply themselves are the vigorous, healthy and happy ones"* (Darwin, 1859).
[4] My observations in Sariska Tiger Reserve (Rajasthan, India) indicate that this radius may reach 1 to 2 meters for dominant males, and less for other individuals. Although, closely near the bigger males are always other younger or older macaques. Concerning primate groups' territorial behaviour, it varies in function of species and ecosystem carrying capacity. Some are very territorial, but total territorial behaviour does not exist (Rowell, 1967).

resources are managed according to strategies for safety and wellbeing. These strategies are simultaneously shaped individually, in group or even among members of different species.

III

Hominid and Human territorial behaviour; Communitary land use systems; Total biodiversity state; Low or minimal biodiversity

Anthropology and history show that, as it was logical to expect, Hominid and primordial Human societies had space and territory representations, and group resource management systems, similar to other primate and social mammal's ones. Those systems, usually called *communitary*, have been universal in all human societies and civilisations until recent historical times. Normally, each human group use to consider as its homeland or group territory an area where it develops its activities, where its members gather, hunt, grow crops, graze cattle, settle their villages and their technological structures, and spend most of their social and individual lives. Usually, for sedentary people the radius of this territory is directly proportional to the distance a man can walk away and come back to the settlement in one day. In many rural communities, the core zone of their territory is of about 2 Km radius, the distance reached by cattle herds each day. Hunting-gathering and nomadic agriculture or nomadic grazing societies may use much larger areas through time, some are of thousands sq.Km. Although, in each period, their core zone is not larger than 2-7 Km radius. Normally, neighbour communities may share the space and resources of the whole or most territory, but each one uses mostly the ones of its nearest area. It may also occur that several communities use the same space for different but complementary purposes, as it occurs for example among many agricultural, grazing, hunter-gathering or fishing distinct groups coexisting in the same territory.

Conflicts may occur if one or several individuals misuse their natural or traditional rights of resources use. In these cases, communitary informal or formal local institutions may act to repair the faults or punish the guilty ones. Informal or formal rules also use to exist for these cases. In several “primitive” societies, war has been reported to occur more by cultural, sexual or honour reasons than by resource spoliation or human exploitation goals (Descola, 1986). Although, micro or large groups also make expansionist and pillage war because they destroyed vital resources of their own territories, or because they had a drift to domination or accumulation tendencies. Nevertheless, and more commonly, human groups and societies also create cooperation and associative links among each-others, that increase their mutual exchanges of all kind, development and security. In general, and through human history, among members of a stable community, active peace among neighbour villages or different nations is the rule, while conflict and war are the exception.

In general, in communitary land use systems the territory is indivisible, which means no one can declare that one part of it belongs exclusively to him forever. Also, the territory is not alienable, which means it can not be sold nor given away to no one. In fact, those are logical consequences of one single fact: land and territory do not belong to anybody. In most civilisations this has a more large sense, which transcends human dimension, because in their cultural representations the world is just the common living place of all living beings. This concept was well expressed in 1854 by Suduamish’ tribe chief Noah Seattle when he answered to a colonial army officer, sent by US government to buy the land where his people used to live, that he could not sell it, because it did not belong to him, but to all kind of beings that lived there (Seattle, 1854).

Indivisibility and inalienability of land have several important implications on space and resources management, use, accessibility and social distribution.
The fact that territory is considered as one single unit and stays so in time, allows human communities to manage it as a whole, composed by different but complementary natural and humanised biotopes. If community's interventions on them are rational, precaution orientated and sustainable, they may conduce to an optimization of natural and human made productivity and prevent resources' erosion.
Usually, in communitary land use systems, space and resources are used simultaneously in an individual, familiar or collective way. Individuals and family units have almost total freedom to circulate in most of the territory, except in privacy zones such as other individuals or families' houses and productive structures, like vegetable gardens, orchards, or handicraft and manufacture structures. Individuals and family units also have free access to all kind of vital resources, as settling space, building, tool, crafting and manufacturing natural materials, minerals, water, game, fish, wild vegetables, firewood, pastures, agricultural land plots, etc. On one hand this is in accordance with the natural right that each human or living being have to use earth and its natural resources in order to ensure his autonomy, his survival and his living conditions. On the other hand, this shapes an equitable basis of resources' social distribution according to the needs and will of each individual, family or community.
Simultaneously, in these systems several structures and productive activities use to be collective. They are made, shared, utilised and maintained by the whole community, as for example villages' roads and trails, fountains, irrigation structures, mills or others.
Another important trait of these systems is that any member of the community can't deliberately destroy, spoil or monopolise neither a particular resource nor an oversized portion of territory that may be considered valuable for the other members of the group. This means that no one have the right to abuse of his freedom to use those resources and territory. Usually, informal or formal decisions and rules prevent those situations. Obviously, those limits depend also from the capability of each culture to figure out risky or destructive situations.
In addition, as I outlined above, these systems also use to have developed informal or formal local communitary institutions, which usually operate according to participative and democratic principles. These institutions take in charge major territory and resource' management, their distribution among individuals and family units, organize calendars for collective production and socio-cultural activities, take decisions concerning planning and regulation of general activities related to land and resources, and about relationships and deals with other communities or social groups, even in large political matters.
From an ecological perspective these land use systems have also intrinsic advantages. All kind of inert substrates, organisms, plants and animals in motion live and evolve also in the open territory. Balance, efficiency and productivity of all ecosystems depend on their functional structure, visible in their trophic chains and in a never-ending network of psycho-physiologic mechanisms and associative, synergic, reproductive, competition or predatory interactions, among others, that configure matter, energy and living fluxes.
In normal conditions, in the present Quaternary Period, alike in former ones, functional structure of most humanised ecosystems is fundamentally composed by primary production species (the spontaneous and agricultural vegetation), primary consumers (the wild and domestic herbivores), secondary consumers (the little and medium carnivores), large carnivores (such as tiger, lion, wolf, jaguar or bear), human beings and decomposers. The whole elements of these trophic chains have essential and complementary roles in the regulation of ecosystem's balance and productivity. If in one

region all those autochthonous species are present in stable and important populations, we say that the ecosystem is in a *total biodiversity*. If local human societies proceed in a proper way, they also have important regulation functions in the ecosystem (Galhano Alves, 2002; Chartiot, 2003; Torri, 2005; Degeorges & Nochy, und.). The terms "biodiversity state" were first written by Valmik Thapar (und.), then conceptualised and used in France by me and used and developed by other researchers.
I must say that presently most of planet' ecosystems are not in total biodiversity any more. In fact, and mostly since 19th century, a huge part of natural vegetation cover has been destroyed or converted to monoculture forestry. Many animal species have been exterminated and, by the present rate, about 25% of the remaining ones may vanish during the next decades, shaping what is called a big extinction. Only two centuries ago, large wild herbivores and carnivores still existed almost everywhere, and the whole humanity lived in close coexistence with them. But since then their populations have been decreasing quickly and are now fragmentised and endangered.
At the origin of this process are destructive and erosive human activities, linked to some societies that became historically dominant. This process has ancient roots, and is common to several civilisations, but became dominant in Europe and accompanied its overseas expansion. Consequently, most territories are now in a state of *low or minimal biodiversity* (Galhano Alves, 2002; Chartiot, 2003; Torri, 2005), as in productivist agrarian and urban systems remaining species are basically man and a few domestic vegetable and animal ones. These systems are fundamentally managed only by one species, man. Their low ecological complexity makes them unsustainable in term. Huge amounts of work and energy are need for their maintenance. Their high productivity is only seem-like. In term they are less productive than total or high biodiversity humanised ecosystems which balance and productivity are intrinsically high, without needing such work and energy' amounts (Galhano Alves, 2002).
This means that, in effective and sustainable humanised ecosystems, wild and domestic animals of several species, including large herbivores and carnivores, live, move and evolve in the territory, sharing it with human societies. Large wild and domestic herbivores need substantial natural vegetation, forest and scrub covered areas to graze. Large carnivores' territories are even bigger as they are in the top of trophic chains. For instance, the hunting territory of one single tiger in north-India is about 50sq.Km, and a wolf pack needs an average 75 sq.Km in Mediterranean regions. Obviously, animal populations must be continuous in space to ensure their survival, so that these numbers have little sense for long term conservation. Species' distribution areas use to be of continental or sub-continental size.
In this point we can realize the advantages and potentials of communitary land use systems for integrated and sustainable territory management. Indivisibility of most territory allows freedom of movements for all kind of species. In these systems, enclosures and fences are rare, except in individual or family fields, villages and quarters. A suitable use of territory permits to keep and even improve different biotopes and much significant areas of natural and semi-natural vegetation, forests, woods and pastures, which are the pillars of the whole ecosystem functional structure.
Management of natural resources as a communitary patrimony is a suitable basis to prevent abusive and destructive uses of them, and facilitates balanced ones. Including in private use areas, such as agriculture fields, communitary regulation institutions may have a balancing role.
As each one of the multiple individual, family and collective local unities have access to the different biotopes and resources, a balanced partition of the using intensity of each resource may be possible. Also, as I mentioned above, this ensures equity and diversity

of resource's availability for each member of local society, increasing social sustainability. Simultaneously, if human societies maintain high or total biodiversity in their territory, each biotope and the whole ecosystem are regulated and used also by a huge number of other little and large living species. In one hand this improves and may maximise ecologic sustainability, balance and productivity. In the other hand, this increases and diversifies the resources for humans and other species.

Till recent times, and mostly until industrial era, communitary type territory representation, use and management systems have been widely common in all continents, human cultures and civilisations. We may say they are the natural and universal manner of humankind and his societies to represent, link-with and use space, ecosystems and its resources. Therefore, much probably it may also correspond to an adaptation structure that, since the most ancestral origins of the species, helps human groups and societies to survive and to improve their living conditions. And this is so because it is apt to optimise intra-specific and inter-specific alliance, association and synergy.

Through history, as in different cultures, communitary systems have been taking several forms. For instance, in Asia, I have been making research in north-India among human societies, in Sariska Tiger Reserve' region (Rajasthan). Most inhabitants of this region are Gurjar (*Gujjar*) cattle-raising' people who graze their buffalo, cow and goat herds in forest pastures. They have a close coexistence with tigers, other large carnivores and large wild herbivores. Their cultural representations of nature and men's place in nature are of *systemic type*, as I called them. This means they represent vegetation, wild and domestic herbivores, carnivores and humans as complementary and interdependent elements of the ecosystem, a kind of cultural representation similar to modern scientific ecology one. Their grazing, gathering and other production systems are well integrated with the environment, in order to create *synergies* with each species or element of their environment. Consequently, they have been able to conserve total biodiversity through centuries (Galhano Alves, 1995, 2002). Although, in 2004, illegal trade organisations killed all Sariska tigers to sell their body parts in international markets. Tigers vanished by factors alien to local cultures, as I predicted formerly (Galhano Alves, 1995, 1999, 2002; Galhano Alves & Garcia-Perea, 1998).

Their representation of territory and resources do not have a defined "property-like" regime. In practice, all the land, the whole jungle, is used and managed by villagers as a communitary territory. Somehow, the territory that surrounds each village is considered as "its territory", but there is not a formal land use system of rules. Thus, land has neither enclosures nor fences, and all villagers and their cattle herds have free access to the resources in an equal opportunities basis. Ecologic processes and wild fauna movements are also ensured. *Panchayiats*, the local representatives composed by elected delegates from several villages take decisions for large zones, but in each village there is not a formal deciding or regulation institution. At this level, as Gurjar people explain *"community decisions are taken together in the village, when weather is cold and men speak around the fire"*. Individual abuses on resources use are regulated in an informal way or, if they are serious, by more formal rules. For instance, and paraphrasing a local farmer, if a person would kill a sacred wild animal (in principle all of them are sacred for the Hindus), *"all the people from the village would make a meeting and would punish the guilty one. For example, they would oblige him to pay a fine, or they would oblige him to feed 100 people in the temple"* (Galhano Alves, 1995, 2002; Torri, 2005).

In Africa, communitary land use systems use also to be prevalent over other kind ones. For example, presently I am carrying on a research work among human societies from

W National Park region (East Gourma), in Niger (West Africa). Local villages are inhabited mostly by Gourmantche people, together with Hausa, Peul, Tuareg and Baryba people. Family units live mainly on agriculture, cattle-raising, bow and harrow hunting and gathering. They coexist with lions, elephants, buffaloes and other large African species in a tree-savannah humanised ecosystem which is in total biodiversity state. Their representations of nature are of Gourmantche "animist" type, mixed with Islamic, Christian and Tuareg ones, and also with modern scientific ecology representations that are common among local young people. This means they consider that spiritual beings do regulate both wildlife and human existence, shaping what I call a *parallel-systemic* representation of nature and man's place in nature. The word they use to name both the whole forest and spiritual beings is *Fuhaly,* which means *"the whole of all beings"*. This indicates they perceive nature as a whole of connected beings (Galhano Alves, 2007 a, 2007 b).

In these societies, territory and resources are also used in a communitary way. The right to use and reap land and resources is ensured to all individuals and families, but no one can abuse of it. Concerning the way of field areas distribution, the villagers say: *"Each adult more than 18 years old and unmarried has right to 0.25 hectare of agricultural land, as a minimum. If he is married, he has more*[5]*. It depends on his capacity and will to work. There are unmarried ones that cultivate almost 1 ha, and some married ones that do less than 0.5 ha. Also, there are no conflicts, neither for water nor because bad private soil managements, nor for other reasons. Normally, each family uses always the same fields...Unless if someone emigrates and gives his field to a friend to use it for free. It may also happen that a field becomes uncultivated and forest grows up there again".* To clear and cultivate a new plot of land, each person must ask for permission to the village' chief. Informal debate about land questions is also made among people. If conflicts linked with field land occur, the villagers have a meeting among some family leading members to resolve it. Normally, this communitary council is composed by the village' chief and one *"old man"* from each ethnic group. Concerning the forest, even these informal use rules do not exist. The villagers describe this free use system as follows: *"For the ones who live in the village the forest is free. But if a foreigner wants to gather wood, grass or to clear and cultivate a plot, must ask for permission to the village' chief... It never happened that someone uses the forest in a bad manner, taking too much wood or grass. Nevertheless, if that would happen, measures would be taken against that person"* (Galhano Alves, 2007 a, 2007 b).

In America, through almost all its pre-colonial history, territories have also been used in a communitary basis, except perhaps during a few and atypical collectivist-like pre-Columbian empires. The same was true among Arctic, Australian or Polynesian societies.

In Europe, communitary territory and land use systems have also been widespread during most of its history. For instance, in several Celtic societies, which thrived in Europe and in the Near East during more than five centuries, until Roman military invasions[6], many agricultural lands were communitary. Each year the plots were distributed among inhabitants, and harvests were shared by all. Forests and pastures were also used in a communitary basis (Sopeña, 2002). In some other Celtic tribes, farming land didn't belong to any individual, but to each family, while most probably other lands where communitary (Powell, 1958). Among Germanic cultures land use

[5] In this region, these areas are the necessary to sustain in food and surplus an adult person and the average medium of persons that depend on her, such as child and old ones.

[6] Celtic societies prevailed all over Central and West Europe, and in the Near East, from the I5th century B.C. till Roman invasions, between the Ist century B.C. and the I st century A.D..

systems were similar, as it happened for example in Visigoth societies. I must mention that these systems had older origins, as they have been continuous since Palaeolithic and Neolithic times. Presently, in spite of an ensemble of historical vicissitudes, communitary land use systems remain in several European regions.
For example, in Portugal, traditionally productive lands nearby villages were divided in plots, used separately by familiar units for vegetable, fruit, green-pasture and cereal production, among others. Although, a majority of territory was communitary (*baldio*), including not only hilly zones, pastures, scrubs and forests but also some arable lands. Portuguese communitary territory management and use systems are heterogeneous; they change according to each region traditions. Nevertheless, as it happens presently in Montesinho Natural Park region, in the north-east of the country, their general features are that all inhabitants of each village have the right to use communitary space and resources, both individually, in family units and collectively. Different types of communitary councils elected by the whole population, or representing all families, regulate land use, distribute arable plots, sanction tree cut-downs, and organise collective production or cultural activities (Dias, 1984; Galhano Alves, 1994 a; Ribeiro et al., 2004; Rodrigues, 1987).
In Montesinho' region, unlike most of Western Europe, biodiversity remains high. Local human societies still coexist with wolves, wild-boar, deer and roe-deer. Even if, in the course of the last centuries they have persecuted these species, exterminated bear, lynx and other species, and destroyed most of native forests. Such *conflictive* and *biocide* relationship with wildlife is linked with their (what I call) *not-systemic* representations of nature and man' place in nature. In Europe, at least since the Middle-Ages, it is considered that *"man is superior to all animals"* and, as Christian Bible Old Testament states, *"his mission is to dominate earth and all creatures"*[7]. Living beings are depict as *"useful or useless, good or bad"*, shaping an anthropocentric, dichotomic and manichean representation of nature, maladjusted to real ecosystems' mechanisms. This reflects also in the whole agrarian, resource' management and production systems of these cultures. Although, if in Montesinho' region high biodiversity remains alive, it is thanks to some atypical local representations of wolf, and to several aspects of its agrarian system. Among these are the extensive familiar agriculture and the lasting, until a few decades ago, of communitary management and use of territory and resources. Presently, these structures are a favourable base for both wildlife conservation and enhancement of human living conditions (Galhano Alves, 1994 b, 2002). Moreover, in Europe as elsewhere, a majority of the regions where biodiversity remains high are the ones where most of the territory remains communitary or did so up until recently.

IV

History of the plunder and destruction of communitary territories and resources; Formation of capitalist mass production and consumption industrial' societies; Land private property; Progress; Economic growth; Development; Egalitarianism; Future

The history of the plunder and destruction of communitary territories and resources is a bloody sequence of violence, terror, massacre, fiddling and exploitation. It couldn't be

[7] Literally, the Jewish text says, in the Book of Genesis: *"God blessed them, saying to them, "Be fruitful, multiply, fill the earth and subdue it. Be masters of the fish of the sea, the birds of heaven and all the living creatures that move on earth"* (La Sainte Bible, 1966, Gn. 1, 28). Although, some other of its assertions, that come maybe from different cultural traditions than the former sentence, have a contradictory meaning. For instance, in the same book of Genesis, one can read: *"Yahweh God took the man and settled him in the garden of Eden to cultivate and take care of it"* (La Sainte Bible, 1966, Gn. 2, 15).

anyway else, since only by violence and manipulation both one single human or entire nations, as the other living species, could be deprived of their natural right to feed and warm up by themselves, and to move freely on earth.
In Europe, the origin of this process can be traced back to Greek and Roman slavery societies. In early periods of Roman history, most territory was *communal* (*ager publicus*); it belonged to the State, as Roman community was a state-city (*polis*), and farmers paid taxes to cultivate plots. Probably, this communal property evolved from ancestral communitary land use systems as militarization of the city became dominant. Subsequently, by the 5th century B.C., also communal property did breakdown. Rich citizens occupy the best lands and consider they *"belong"* to them, starting a process of intrinsic primitive capital-land accumulation and exploitation of the poor work-force. Military expansion through Mediterranean amplified this process, conquered lands and resources were stolen, their inhabitants were made slaves by millions, and a huge mass of sub-proletariat appears also among Romans. By the 2th century B.C. massive slavery had became a specific roman system, never seen before in the Ancient World. Dispossessed people became also a never-ending source of soldiers that sustained the system by violence.
In 111 B.C., Espurio Thorium law (*lex Thoria*) abolishes the last restriction to *land private property*, declaring formerly occupied communal lands as property of occupiers (an important part of Roman territory), and states the remaining area as communal, what did not avoid consecutive occupations.
For about five centuries intensive land and slave exploitation conduced to huge capital accumulation. But simultaneously, soil and resources erosion (principally in Italy and Sicily), slave mass rebellions, cost-productivity low rate of slavery and enormous *latifundia*, and *democrats'* assumptions that latifundia and somehow slavery were unnatural[8], generated another form of exploitation, by renting out plots of large estates to the people (*colonies*). This increased production' cost/profit rates but did not stop land property concentration. Tenant farmers (*colons*) accumulate debts to landowners, and progressively approached the status of serfdom. During the 4th and 5th centuries A.D. imperial edicts deprived colons from translocation freedom, transforming them into real serfdoms. Meanwhile, mass poverty had a fatal effect on handicraft, trade and military structures. When in the night of 24th August 410 A.D. Roman slaves opened the doors of Rome city to Alaric' Goths and their army, strong of other 40 000 rebelled slaves, the foundations of feudal society were done (Kovaliov, 1948).
The fact that lions became extinct in Europe during Roman Empire is symptomatic of biodiversity and natural resources' erosion caused by its accumulative character. Greco-Roman culture had several anthropocentric features, depicted for instance in Prometheus' story[9]. Although, Roman cultural and religious structures still had strong links with nature; for instance, as Rome She-Wolf had a master role in the city's origin,

[8] A speech of tribune Tiberius Graco in 134 B.C., reported by Plutarch, does express this clearly : *"Even wild beasts in the jungle have their dens and caves where they can protect themselves, but the men who fight and die for Italy do not have anything unless the air and the light. Deprived of roof, they go wandering with their wives and sons. Commanders cheat the soldiers when in the battlefields incite them to fight to defend from the enemies their tombs and homes; they lie, because a majority of Romans do not have neither paternal altar nor ancestors' tomb. They only have the name of world' masters, but they must die for other's luxury without being able to call theirs a piece of land"* (in *Tiberius Graco, IX*). In the following year of 133 B.C., Tiberius Graco and 300 of his democrat partisans had been assassinated by the senators, in Rome.
[9] In Protagoras' version of Prometheus' myth, written by Plato, *"man had is part of Gods' lot"* as he received Gods' techniques and arts, but such gifts were given to him to balance his lack of capabilities that had been given to the *"beast that do not speak"* (Platon, 399-390 b.C).

the species was almost sacred. At the fall of the Empire, European ecosystems still had a high biodiversity structure. The main global destruction wave was to overcome. Medieval land property structures seem to be a combination of late Roman serfdom and communal ones, with communitary systems conserved or re-established by the once submitted other European societies, the whole thing under the violence of military, political and economic domination of feudal landlords, who take possession of land and people by war. Moor and Ottoman regimes, in the edges of Western Europe, may have not altered substantially this situation as they were mostly based on tax imposition. Although, Moor had communitary territory use systems that may have favour partial re-establishment of autochthonous ones, improved by early Arab agricultural skills and cultural tolerance[10]. The rising or imposition of Christianity as unique religion in its Old Testament form had also severe ecological consequences. In fact, while Jesus teachings are centred on love, life and a sort of spiritual wandering-like freedom, Christian churches accentuated anthropocentric, manichean and repressive features of Old Testament, fitting to servitude and manipulation, both to erase what remained from ancestral European "animist" cultures, and to support dominant classes which provide their needs. The reaction of Saint Francis of Assisi to this situation had limited results. Therefore, a huge persecution of wildlife began, and did not stop till the present. When fire weapons, poison and machinery use became generalised, after 18th century, species' extinction rate became exponential. But biodiversity and habitats' growing destruction have been also a consequence of cumulative oversized land and resources' exploitation, since Roman and even pre-Roman times, crossing the Middle-Ages, till the present. Although, since Antiquity, destructive' exploitation did not reach all regions with equal intensity. Hilly, marginal or not-strategic lands were used in a less erosive way. There, autochthonous agricultural, grazing or hunter-gathering semi-autarkic systems, both familiar and communitary, did remain through the centuries. It is mainly in those regions were high or total biodiversity remained alive, not only in Europe but also in the other continents.

Through history other human civilisations, by similar violent methods, developed mass land deprivation systems, slavery, feudal-like societies, huge war structures, military empires, and made massive deforestation, wildlife destruction and arable soil erosion. It is the case, among others, of Mesopotamian and Chinese ones, or smaller human groups like Easter Island ones. But evolution of those processes in Europe led to present global *status quo*.

Since Renaissance period, by 14th century, development of manufacturing, trade and finance in the core of towns and roads, transcontinental Venetian trade, consecutive Portuguese and other kingdom's global trading expansion configured European proto-capitalism. Business surmounts pacific merchants of ancient trading routes and handicraftsmen. Simultaneously, in emergent cities, science, philosophy, arts and technologies rise. Among urban environment, partially free from feudal, ecclesiastic control and agrarian cycles, intellectuals recover and develop Classic knowledge which has been partially conserved by Arabs, then by monks, and they enrich it with travel's information. This activity could emerge progressively from clandestinity, imposed by Catholic Inquisition, mostly because overcoming business and pre-industrial classes

[10] In Mediterranean Islamic cultures, land property rules include also communitary lands, freely used by tribes, families or individuals, in addition to general state land property and religious institutions one (Bourbouse et Rubino, 1992).

needed its outcomes. This intellectual drift[11] resulted in two central concepts, humanism and freedom. Through time, these resulted in other two concepts, equality and *"progress"*, that will lead since 19th century to *"economic growth", "development"* or *"egalitarianism"* ones.

Expansion of trade, technologies, manufacturing and finance made possible a considerable improvement of material and welfare conditions, at least to the upper classes. After a primitive capital accumulation period came a full period of material growth. This was made possible by military and colonial occupation of almost all the world, since 16th century. European natural resources were eroded, but in the other continents never such oversize' exploitation was done before. After genocide-like and ethnocide military conquest, European States transformed colonial territories of Africa, Asia and America in extensive raw material and food sources. This was made possible by changes on the local land property and use systems. Territories were considered property of colonial State then distributed to European *colons* as private *latifundia*, or directly plunder by them and by crowds of European migrants. In-kind or money taxes were imposed to smaller colonial or autochthonous farmers, grazers or hunter-gatherers. Work has been imposed to each individual and entire nations in the form of slavery, serfdom or starvation wage' proletariat, controlled by violence, manipulation and cumulative debts with interest rates. Racist and civilizing ideologies gave moral support to this structure. Vast territories had been deforested and converted into mono-agricultural or mono-forestry exploitations. Oversized mining, hunting and fishing rose. This is the manner how in colonised territories most of communitary land use systems have been destroyed. Along with many production structures and knowledge that once allowed human societies to live in synergy with local ecosystems. Actually, this process did also globalise many technologies, products, knowledge and exchanges which improve human welfare, as for instance medicines, electricity, engines, science or concepts like freedom and equality. But the subjacent socio-political structure, which carried the diffusion of these valuable improvements, had disastrous ecological, social and cultural consequences[12].

During this period, an idea took form gradually among Western politicians and people; apparently unlimited natural resources, increasing technology and production' means, made them conceive that it would be possible to build up an ever-growing universal and unlimited welfare by cumulative *material-economic growth*. This abstract path was called *progress* or, latter on, *development*. And the way to build it was ever-increasing productivity to maximise industrial production of objects. In spite of Malthusian and other warning analysis, from 18th till 20th centuries, those concepts have become a general representation (a faith) of the meaning of social activity, hence directed to the *future*. It is in this point that, among western or westernised people, time and life perceptions stopped being mainly cyclic and accessorily linear (elliptical), as in all living beings, to become chiefly linear, a race ahead to the *future*[13].

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[11] We employ here the word *drift* in the same sense of French *dérive*, employed by Guy Debord and Situationnism (Chollet, 2000) to conceptualise the method of getting and developing knowledge, and build up new situations, by existential, living, intellectual, artistic or travelling wandering. Concerning Renaissance period, Leonardo da Vinci life-story is paradigmatic of this practice.

[12] This was not the colons' point of view. For instance, in 1756, in North-America, John Adams wrote: *"When colons arrived in America this continent was a continuous wild territory, home of wolves, bears and wild men. And now the forests are destroyed, land is covered by cultivated fields and by houses of civilized and educated people"* (Lopez, 1978).

[13] The cultural nature of "future" concept, in the sense above described, has been put in relief in France, in 2000 decade, by several street political demonstrations reclaiming a *"moratorium on future"* by a stop of calendar accounting (Martí, 2007).

However, independently of these industrialist ideological doctrines, growth was an intrinsic and structural need of new massive industrial-capitalist systems. Global, incessant war among industrial-colonial States for territories, resources, workers and markets, needed an ever-growing military apparatus. Also, inside these societies, agricultural and industrial units fight for market control as a condition for survival. This competition is mainly determined by merchandise' prices, supply and demand, determining sales' level. This leads to an increasing productivity, obtained by more work, more automation, more natural resources' consumption and violent or political control on raw materials sources and markets. Among humans of these societies, unlimited material richness of individuals or nations became a synonym of *success* on survival.

In this socio-cultural and production context two super-structural questions had to be solved. Massive industrialisation needed crowds of human workers, who would be also crowds of consumers, and it needed to feed them for cheap. This was solved by a simple strategy: total deprivation of right of access and use of land and resources to most population, and rising food and merchandises production.

I must mention that, in feudal societies, most of the population had the right to feed by itself, even if landlords take a part of the production varying from 1/3 to 1/10. In addition, large territories were communitary, open to free use. Proteins were hog by upper classes, which had the monopole of big wild game hunting and of weapons, but everyone could cultivate land, graze cattle, and gather food, water, firewood or materials. This was seen as a natural right, restored by slavery' fall, but it was also a duty imposed by rent' feudal systems.

Those goals have been reached by different policies, but all of these follow that underlying strategy. In England, in 14th century, landlords and monasteries gather and *enclose* peasant rented lands, expulse them by violence, and replace crop farming by sheep pastures to supply textile manufacturing. During 16th century, monasteries closing results on land seizure by rural bourgeoisie (*gentry*). At the same time, wool profitability induces enclosures expansion. In 18th century, by State policy, more than 3 000 villages were enclosed and its lands gathered. Gentry and landlords rented-out large plots to farmers; and their conjugated work built up intensive *high farming*. Through this large period, millions of people have been expulsed from land; their villages were set on fire, and have been forced to migrate to industrial centres where they must work in factories and offices. Since 19th century national agriculture was not anymore able to supply urban growing demand, but protectionist *corn laws* sustained it, keeping high prices in spite of urban proletariat poverty. In 1849 corn laws were abolished by pressure of industrialists and land-aristocracy. Agriculture got ruined and remaining farmers migrated to cities and colonies, but industrial society structure was achieved (Coulomb, 1994).

In France, such change was made abruptly. During 1789 French Revolution peasant rebelled mass reclaims communitary land use systems' maintenance, feudal servitude abolition and taxes reduction. The 4th August 1789 the Constituent Assembly abolished feudalism. However, overcome industrial and business classes did not intend to distribute land and territory to rural mass, neither on an individual nor on a collective basis. Ancient communitary land use systems seemed backward to them[14]. They

[14] Although, peasant' masses wish (expressed, for instance, in the *Carnets de Doléances* set everywhere in France by the king Louis XVI during the revolutionary first period for people to write their complains and wills) was, on one hand, abolition of feudal servitude and a reduction on taxes, and, on the other hand, conservation of *"agrarian collective land uses of land, which have a essential role in their subsistence economy precarious balance"* (Coulomb, 1994).

impose *private property* of land and resources, supported on Ancient Rome law. This new legal feature was invented in 18th century, being defined by jurist Pothier in the triptych *"usus, abusus, fructus"*. The goals of such policy are explicit in this period debates. For instance, in 1792 St Just states: *"The cultivator...does not buy anything; his needs are not in trade".* In 1793 Conventioneer Delacroix declares: *"If we give the land to the people, we will not have arms"* (for industry and agriculture). During those years, new rulers repress violently peasants' movements for communitary use of land. Gracchus Babeuf denounces *"the false abolition of feudal regime"*. He noticed the contradiction between the right to existence and this property regime. His *Agrarian Programme* reclaims, among others, *"share of common lands not as property but by use"*, according to each region communitary traditions[15]. In 1797 Babeuf was condemned to dead and executed, but through 19th century French peasants' struggles remained. In 1804 land private property rule was defined in Napoleon's Civil Code, which has been adopted and adapted by many states since 19th century. By the new rule direct link between political power and property is avoided, eluding contradiction between civil equality and property right; all kind of communitary land use is forbidden, avoiding return to *"natural state"*; land became a merchandise, forcing farmers to capitalise in order to get or to keep it, increasing intensive market orientated production; most rural population is deprived of land and resources use, becoming agricultural, industrial or soldier proletarians (Coulomb, 1994).
In all very industrialised countries, like in prior ones (England and France) establishment of individual private land property preceded or coincided with industrialisation' start (Coulomb, 1994). Its expansion reached all Western countries, then other regions. For example, in 1874 a 45% of Portugal was still communitary; presently less than 6% remains so (Galhano Alves, 1994 a; Rodrigues, 1987). In Leninist regimes the same was made by a different way.

V

Dependence; Work; Money; Ever rising growth

These processes caused a colossal migration never seen before in humankind' history. Through the last centuries billions of persons have been deprived from their natural right to accede and use land, vital and natural resources. Hence they depend on an exchange merchandise to get food, energy and welfare. As their only merchandise is themselves, they became *proletarian* dependent *work-force*. They must *work* in industrial units (mostly in factories, offices and armies) in exchange of *money*, the universal abstract merchandise (Marx, 1883). They need to be *employed* by someone to do whatever, according to rigid timetables.
Hence, being *unemployed* means poverty, starvation, dead, "survival incapacity", "social inadaptability"... It is in this point that *work*[16] became a social imposition; an abstract form of activity independent of a person needs and wills. As it is generalised and banal, atomised and militarised by its industrial chain social distribution, it destroyed or subjugated all other kinds of social relationships. In hunting-gathering and agrarian

[15] Consecutively, François-Noël (*Gracchus*) Babeuf developed a collectivist totalitarian programme and organised clandestine resistance in Paris, which had strong influence on subsequent political movements (Buonarotti, 1828). His nickname may be related to similarity among his historical context, and earlier democratic thinking, with Graco's ones (2th century B.C.).
[16] Etymologically, in most European idioms *work* concept expresses the activity of people without decision power (dependents, serfdoms or slaves). Originally, Germanic *work* means orphan child' forced activity; Latin *laborare*, slaves' sufferings and humiliations; Romanic *travail, trabajo, trabalho*, came from Latin *tripalium*, a yoke employed to torture slaves and prisoners.

societies, past and present, work-force is used to accomplish concrete activities in time periods linked with natural cycles, individual or social needs, or impositions (Krisis, 1999)[17]. Time used to production activities tends to be lower in communitary societies[18] than in hierarchic slavery or feudal ones which need large material accumulation. But in capitalist-industrial ones work becomes an abstract-general activity, independent of its content or goal, culturally represented as morally valuable, and ultimately bound for endless accumulation of abstract capital-money. By this manner dependence, work, money and ever rising growth have been linked as a unique social and cultural structure, shaping an anthropologic total social fact.

VI

Leninism; Nazi-fascism; Democratic socialism

Leninist *collectivist land property and use systems* resulted from several social and intellectual events. Karl Marx centred his economic growth theory in the fact that landowners' rent is made in detriment of farmers' profit, shortening investments for increasing productivity. In 1900, Kantsky, and later Lenin, thought that industrial and capital growth only could happen by land rent ending, by elimination of private property. They deem this meant land nationalisation, and its exploitation by industrial farmers. As single-party dictatorship would nationalise territory easily, socialist state-capitalist systems would growth faster than liberal-capitalist ones[19]. This policy was executed in Soviet Union after 1917 revolution and in all Leninist countries, almost half of the world in the second half of 20th century (Coulomb, 1994). Russian Revolution abolished slavery-like feudalism and nationalised land but, like in French Revolution, new rulers did not give the land to the people. Since their beginnings, Leninist State land property systems evolved to collectivist industrial agricultural units, working as State enterprises or as collective cooperatives obeying to State planning (Lenin, 1923). Since 19th century, in industrial countries proletarian rebellions got stronger, sustained by workers' "wage-slavery" status. Lenin, based on Marx analysis, envisaged State property and production planning as the "proletarian rule", meant to bring collective unlimited capital growth to *progress* towards *total welfare* "communism". To reach this abstract state, in Leninist regimes a totalitarian bureaucratic apparatus imposed planned, intensive, industrialisation, work and production, by ideological manipulation, violence and compulsory population migration to industrial production centres. Through this period, from Siberia till Africa, many communitarian land use systems have been destroyed. Since this over-tense structure collapsed in 1980 and 1990 decades, the land is being privatised in Russia[20] and elsewhere by State, or by IMF or World Bank imposition[21]. In 20th century, in Europe (1922-1975)[22] and abroad, Nazi-Fascist totalitarian regimes set up *State corporatism*, an "alliance" among State, large industrial and agricultural

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[17] German philosophers from Krisis group state that *"the history of the modern age is the history of the enforcement of labour* [work]*, which brought devastation and horror to the planet in its trail"* (Krisis, 1999).

[18] In India, Europe and Africa, among people from semi-autarchic societies that maintain communitary land use and familiar small farming, I noticed periods of more than 8 hours a day of discontinuous production activity, but also others of 2 hours a day or less.

[19] This Leninist policies to implementing industrial massive production were well depicted by Mao Tse-tung in 1957, in his speech to the Chinese State Supreme Conference, where he declared that *"the achievement of agricultural cooperatives solved the big contradiction between socialist industrialisation and individual agricultural economy… By the development of agriculture and cottage or basic industry, heavy one ensures its markets and funds, and develops it-self faster"* (Tse-tung, 1969).

[20] Land privatisation was legalised by Russian Parliament (Duma) the 26th June 2002, by a vote of 258 to 149.

[21] More recently, in 2004, Zimbabwe' Robert Mugabe totalitarian regime adopted a Leninist type of land state property, nationalizing all the agricultural lands.

[22] 1922 - Mussolini proclaims Fascism in Rome. 1975 - Franco dies in Madrid.

latifundia landowners' groups, protecting each others interests by patronage and violence. Dictatorship repressed political or social opposition. Large private landowners keep territorial control on rural working-force, with State support. Low wages and high rents result on high profits. Low prices of food and raw materials, and low wages, do support industrial and financial growth in favour of economic, political and army oligarchy (Coulomb, 1994). This social selective and militarised structure, set for capital growth, conjugated with nationalist racism, resulted on slavery work, plunder expansionism and genocide selection, summarized in Nazi axiom *"Work liberates"*. In Europe and America, Fascist regimes used all kind of methods to destroy communitary territory use systems, for obvious reasons. For instance, Portuguese Fascist dictatorship (1926-1974) gave or sold communitary lands as private property, allowed its seizure by local party bosses and confiscated thousands of Sq.Km for timber forestation (Galhano Alves, 1994 a; Rodrigues, 1987).
Since 1900, West European democratic socialism, and later social-democracy, considers that "a peasant who labours his private land by his own work does not exploit anyone, being coherent with a socialist society". This concept evolved to a Keynesian policy that favours *industrial family agriculture private land units*. State measures support farmer's land ownership, by decreasing renting-out rights and profits, by costs and prices' regulation, by subventions, by cooperative structures and by land property concentration. Firstly applied in France and Benelux, this policy resulted on the present European Union agricultural one, aimed to support delineated territorial, demographic and industrial production structures. Since 1960 decade, this policy supports increasing industrial agricultural productivity by mechanisation and chemicals, resulting on high production, less working costs, and lower prices for urban and international markets. Capital transferred to farmers by subventions on prices keeps them low and rural incomes high. Larger farmers get most of these subventions. Remaining little peasants get ruined and become proletarians (Coulomb, 1994). Industrial market-orientated agriculture ensures permanent supply of low-price food and raw materials for urban proletarian population and for industry; thus avoiding wages' rising and capital growth decrease. It keeps also urban-rural demographic asymmetry, ensuring to industrial centres a working-force supply. Paradoxically, as agriculture over-intensification leads to overproduction, causing danger of prices dropping and of farmers ruin, subventions are given to set-aside a huge amount of farming-land. Also, subvention programmes avoid territory over-depopulation. Presently, "productivist" agriculture policies of other much industrialised countries, as for instance the USA one, are similar to the European one, even if they employ other mechanisms.

VII

Prohibitionist societies; Homeostasis; Attachment behaviour; Biological unconscious

As we saw in the above paragraphs, through at least the last three millenniums the abolition of communitary territory use systems has been made by different methods such as violent plunder, expropriation or subtle pass from communitary status to communal one, and then to private one. This process, common to several civilisations, has been particularly intensified in Europe, and then reached the entire world. Some present German philosophers call these two steps *"internal colonisation"* followed by *"overseas colonisation"* (Krisis, 1999). By those policies, ancient oligarchic or modern much industrialised capitalist societies, "liberal" or collectivist, deprived a majority of

people from free access and use of territory and resources[23], transforming them on dependent working-force and consumers in order to survive. This permitted huge capital concentration and growth by intense exploitation of natural resources and work. Rising technologic development has also been used for this goal. But these three tools (territory and resources control, work and technology) do not explain by themselves the formation of present massive consumption societies.

In fact, in such conditions it is technically possible to produce hundreds of millions of whatever merchandise units, such as a little plastic zoomorphic object. But this does not imply people to buy it. Therefore, unlimited consumption tendency is an essential condition for mass consumption societies' formation and existence, and it is linked with *attachment* behaviour systems.

Human beings, as all animals, have three fundamental homeostatic[24] behaviour systems: the food & energy one, attachment one and sexual one. Attachment behaviour[25] aims to establish and to keep the affective and linking proximity, and communication, among individuals of the same species. It is a fundamental behaviour for survival and evolution of many living species (Bowlby, 1973, vol. I, III). But attachment also exists among individuals of different species (Galhano Alves, 1995, 2002). In all homeostatic behaviour systems the loss of their goals generates stress and distress, activating incessant mechanisms to re-establish balance; these are aimed to the access to food & energy, to the creation of intra-specific and inter-specific attachment relationships and links, and to sexual relationships and links (Bowlby, 1973, vol. I, III).

Among human societies that live in close relationship with high or total biodiversity ecosystems, I have found a strong attachment towards their biologic environment, as several evidences show. Among people of Sariska Tiger Reserve region, in India, 88% of their free drawings represent wild and domestic animals and plants, and only 12% represent humans or artificial objects. Wildlife is also omnipresent in their dreams, daily aesthetical contemplation of nature moments, daily behaviour, speeches and cultural or cognitive representations. The same happens in W National Park region, in Niger, among human societies of lion savannah. This strong inter-specific attachment to each particular living being and feature, to the whole biologic universe, to the whole environment and landscape configure what I call the *biological unconscious*. The biological unconscious is a part of the psyche, different from the personal unconscious and from collective one; although, the three are structurally interdependent. It is aimed to and results on the creation of links among each individual and the other living beings. These links shape an unconscious knowledge of the living that successively gets behaviour, symbolic, cognitive and complex forms. Biological unconscious attachment behaviour systems exist in all living beings, but its normal development needs proper environmental and socio-cultural conditions. Their universal existence in human species is attested by the common attachment to animals and plants, natural features, natural processes and landscapes (that is also called “biophilia”). Another evidence of this is

[23] Therefore, all these societies should be called *prohibitionist societies* concerning their superstructure, as them all are based on the interdiction for most individuals of the natural right to the autonomous use of territory and resources.

[24] Homeostasis is the property of either an open system or a closed system, especially a living organism, that regulates its internal environment so as to maintain a stable, constant condition. Multiple dynamic equilibrium adjustments and regulation mechanisms (control systems) make homeostasis possible. The concept was created by French doctor Claude Bernard (1865). He also stated that *“constance of the internal environment is the condition for a free and independent life”.*

[25] Attachment behaviour system has been described and studied by British psychoanalyst and ethologist John Bowlby since 1948.

the universal presence of those natural elements, since Palaeolithic times, in the cultural, religious or aesthetical representations, literature and art[26]. Accomplishment of inter-specific attachment is an intrinsic and fundamental factor for individual and collective homeostasis and welfare. Obviously, inter-specific attachment is totally possible in total or high biodiversity humanised ecosystems, as it happens in the examples above (Galhano Alves, 1995, 2002).

But in such environments cultural factors may also inhibit inter-specific attachment or get it selective. For instance, I noticed that among people from north-east Portugal, free drawings represent mostly village scenes, houses and people, in spite of their close coexistence with wildlife. Negative cultural representations of no-human life resulted on a partial repression and inhibition of inter-specific attachment, and on an absorption of the peasant universe into itself. This has negative repercussions on local cognitive representations of nature, and on people's relationships with several species and with their ecosystem[27]. Yet, in a whole, they keep attachment to their natural landscape (Galhano Alves, 1995, 2002).

Thus, in total or high biodiversity humanised ecosystems, where close, multiple and daily interaction with wildlife takes place, inter-specific attachment behaviour may accomplish homeostatic satisfactory levels. Simultaneously, in this type of rural human groups, family and solidarity interactions use to be dominant, improving possibilities for intra-specific attachment behaviour homeostasis. They are societies where loneliness does not exist.

Also, when in these societies communitary territory use systems are predominant, together with family land use, the free access to vital resources is ensured to each individual. This freedom supports homeostasis of food & energy behaviour system, which just have to activate the necessary processes and actions, in space and time, to get and keep food, water, combustible, materials and tools, that are accessible in nearby areas. Simultaneously, gifts and trade may provide exchanges of supplementary vital or luxurious things.

By these reasons, in communitary land use societies living in total or high biodiversity ecosystems, both food & energy and attachment behaviour systems have a normal and favourable support to keep homeostasis. In fact, among these societies, distress or conflicts are mostly caused by sexual behaviour system, because of natural falling in love, marriage or gender discrimination socio-cultural repressive structures, and also by attachment loss caused by dead (mourning). Therefore, stress stays in a low periodical and natural level. This is well expressed by a young Gurjar tribal man from Sariska Tiger Reserve region who says: *"I love Gurjar life. Because I have food, I have milk, I live in the jungle and I do not have too much work"*.

VIII

Stress; distress; employment; unemployment; hierarchy; competition

These balances can not happen, or may difficultly happen, in the urban or agrarian low or minimal biodiversity ecosystems and in the prohibitionist land use systems, such as ancient oligarchic or present capitalist ("liberal" or collectivist) societies. In fact, in very

[26] Presently, millions of persons, from urban minimal biodiversity regions, travel each year to high biodiversity ones in order to *"contact with Nature"*. Tourists who travel thousands of kilometres to spend some days at Sariska Tiger Reserve, in India, use to say they did it just to *"see animals"*. This is also an evidence of the existence of the inter-specific attachment behaviour and biological unconscious (Galhano Alves, 1995, 2002).

[27] Yet, an extreme case of selective inter-specific attachment occurs in Castilla (Spain). By some obscure reason local populations wiped out all trees, except the ones of one single species, *Quercus ilex* (Holm oak) (Galhano Alves, 2002).

urbanised or very eroded agrarian environments, huge masses of people have been disconnected from nature and biodiversity. Last centuries massive migration, caused by the political processes above described, resulted on concentrationist urbanism and on present demographic imbalance. Now, in much industrialised countries, about 80% of people inhabit in urban areas. Global urban population is about 50% of humanity[28]. Most people inhabit in megalopolis. In such minimal biodiversity and abiotic environments, those populations have very low poor chances to direct their inter-specific attachment towards biological organisms, vegetation and fauna, nor to natural features. Therefore, inter-specific attachment is in permanent *stress*. Mechanisms to re-establish homeostasis are permanently activated, but they can never reach their goal as it does not exist in such artificial environments. Consequently, transference mechanisms of defence are over-activated, leading to ever-growing attachment behaviour towards the things that exist in such environments, i.e. towards their elements. These are mostly objects, images and abstract features, which can not bring real homeostasis to the attachment system. Massive inter-specific attachment to pets, two-dimensional audiovisual documentaries on nature or vacation travels to natural regions may reduce such distress, but can not end it in the daily existence, mostly at the unconscious level. The same is true concerning the existence of a few urban public gardens.

Also, as in these societies the free access to vital and natural resources does not exist for most people, by land property regimes plus physical distance, their survival depends on getting abstract exchange merchandise (*money*) to buy food & energy, things and habitats. The lack of direct contact or free access to vital resources, uncertainty and randomness of getting money, produce permanent *stress* and *distress* of food & energy behaviour system. Paradoxically, to get it they submit their time and working-force being *employed*, what naturally increases their stress or, inversely, makes them feeling proud of being so by ideological manipulation and self-suggestion. Alternatively, they must steal those vital items, what is also a stressing situation. In such conjuncture, individuals logically link *unemployment* or *bankrupt* with poverty, misery and socio-cultural inferiority. At an unconscious level those mean *dead*, leading to extreme distress. For these reasons, mechanisms of defence are permanently over-activated for exponential accumulation of money and merchandisable objects, which may procure present and future "security", and social status.

Finally, in such societies the absolute dependency of indirect, uncertain and random ways to get resources vary in function of each one' rank in social *hierarchy* (peasant, vagrant, not-proletarian, proletarian, unemployed, employed, low waged, upper waged, subordinated, superior, boss, capitalist, citizen, ruling-party member, military or ruler). For this reason, *competition* becomes the centre of social activity; competition for resources, work and money. Thus, in prohibitionist, oligarchic or capitalist ("liberal" or collectivist) societies, competition among each individual, each production unit and each social group invades all spheres of individual and social behaviour, handicapping intra-specific attachment. This configures an implosive social structure. Competition prevails on synergy, association, attachment and alliance relationships, on the contrary to what is normal in all other animal, primate, hominid and human societies. Intra-specific attachment system becomes overstressed, and mechanisms of defence are permanently over-activated, making transferences by increasing competition, attachment to objects, images or abstract features, or by turning aggressiveness into oneself. Competition for work, money, productivity, consumption and social rank

[28] Data extrapolated from 1995 World Bank demographic statistics.

overcomes honesty, sincerity, solidarity and intra-specific attachment. Aggressiveness, violence, loneliness, stress and distress become general, resulting on a collective agitation state. Over-activity and depression become pandemic. Suicide also becomes common.
Humanity and other primates always used psychotropic drugs for spiritual, intellectual, therapeutic or ludic purposes, but in such socio-psychological structure pandemic drug over-consumption, legal or illegal, becomes crucial for artificial increase or decrease of dopamine and endomorphine levels. Cult of competition becomes massive under many forms, including mass sport matches. Attachment frustration results on transference by oral, sexual or aggressiveness malfunctions. Social or arbitrary violence and corruption become common. In such conditions, a huge and expensive armed police and prison apparatus appears as a violent system of control to avoid total social implosion of these anonymous mass societies[29]. Also, violent competition among States, industrial, finance and political groups results on a continuous state of nomadic global war for control of resources, people and markets, needing an ever-growing huge military apparatus, which may lead to global implosion.

IX

Objects, images and abstract features; boredom; simulacrum of activity; simulacrum of life; simulacrum world; massive production and consumption societies; societies of objects

But, fundamentally, in such social structures and in minimal or low biodiversity environments, inter-specific and intra-specific natural attachment behaviour is not able, or has many difficulties, to accomplish homeostasis. This results on incessant over-activation of mechanisms of defence to re-establish balance, what leads, in such conditions, to attachment transference mainly towards *objects, images and abstract features*; which are the more easily accessible things in such environments. This results on exponential consumption of those items. As in those societies they are produced as merchandises, this supports intrinsic ever-growing industrial production and capital growth. But such items are not able to satisfy only by themselves human natural attachment and existential behaviour needs, which evolved through time in very different natural and social environments (Galhano Alves, 1995, 2002). Thus, massive *boredom* becomes chronic, increasing mass consumption, agitation, violence and depression (Vaneigem, 1999).
Therefore, attachment frustration is also a structural and dynamic support of massive production and consumption societies, together with territory control and intensive exploitation of natural resources, work and technology (Galhano Alves, 1995, 2002). The first condition for their existence is the destruction of all links between man and nature (Debord, 1967).
Moreover, boredom is also linked with the conditions in which human production activity is transformed into an impersonal and repetitive behaviour by productivist work chain distribution[30], in the factories, offices and industrial farms. Freud pointed out the virtues of work (as human productive activity directed towards a goal) and its importance for psychophysiology balance when it is freely chosen, hence engaging one's personality. But in such production systems it is not so for most people (Marx, 1872-75, in Marglin et al., 1974; Friedman, 1963). Leroi-Gourhan also noticed inadaptability of human

[29] Concerning this aspect, Herbert Marcuse pointed out their condition of *"societies under control"* (Marcuse, 1976).
[30] Frederick W. Taylor' methods of work management increased these alien, monotonous, military' type characteristics.

psychophysiology to them (L.Gourhan, 1965). Distress became intrinsically linked to what should be a vital and creative, individual and social, productive activity. For most people work has become an activity separated from their wills, needs or talents, a compulsory way to get a wage[31]. Their lives are outside it, during "free time". Production units must use all kind of control, manipulation and recompensing methods to keep productivity[32], while competition plays also its role (Friedman, 1963). Therefore, from an existential point of view, for most people work and production activities became what I call a *simulacrum of activity*.

Also, as most of the attachment and consumption behaviours became directed, by transference mechanisms, towards artificial objects, images and abstract features made to balance boredom, and this inside highly artificial environments, most people' existence has become what I call a *simulacrum of life*, in a *simulacrum world*.

In such social and psychological environments it is not surprising that many economists postulate that *"human needs are unlimited"*. It is also in such environments that, since 20th century, modern non-figurative abstract art did develop as a common manifestation of human absorption into its own artificial abstraction-born world, while surrealism used figurative art to picture the human existential and inner world remaining under *unbiotical* urban structures. Subsequently, pop art depicted it as merchandises.

Herbert Marcuse did classify these societies as *mass consumption* ones, during a stage when massive production and consumption were mostly orientated towards objects and tools. But such consumption growth is also qualitative. In its first 19th and 20th century phases, massive industrial production did generalise many useful objects, products and tools. Industrial production was still orientated for useful needs improving welfare. It inherited and reproduced the handicraft and manufacturing traditions, making durable, functional or sophisticate products. It is true that the way the production rates, transport or energy and resources consumption were organised, was already ecologically unsustainable. But its outcomes have been, and still are, a crucial factor for human species welfare. This is obvious for all people and civilisations, even in the remotest villages, that may now use bicycles, motor vehicles, water pumps, biochemical medicines, sewing machines and many other items.

However, presently different phases are mixed up in the consumption behaviour. During 20th century, radio and cinema reached almost all the world. Since the 1960s, daily mass consumption of images and sounds has become a fact with television spreading both in much industrialised and not-industrialised countries. Also, in the former ones, mass consumption of all kind of items rose. Beyond a certain level, it does not matter any more neither what is produced and consumed, nor how it is produced, nor for what purpose. Enterprises and entire nations need to produce and sell permanently more and faster to keep markets, work and capital growth. Dependent masses are permeable to all kind of manipulating propaganda, called *"marketing"*, and intrinsically need always more consumption. In this running ahead process, whatever merchandise is a *"good"*[33]. Quality, durability and usefulness decrease. This affects all kind of sectors, including intellectual, cultural, teaching and research activities, which by mimicry submit to the crowd's competitive productivity rate. Besides, high quality natural food and

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[31] Marx noticed that the forced worker *"feels like being at home outside the work, and outside himself in the work...hence work is not the fulfilment of a need, but only a mean to fulfil needs outside of it. One proof of its alien character towards the worker is the fact that since the moment physical or another kind of coercion cease to exist, one runs away from work as from pest"* (quoted: Krisis, 1999).

[32] This is particularly visible in Leninist systems, where compulsory work is rewarded with *"productivity recompenses"* and *"work hero awards"*. In "liberal" capitalist enterprises, similar methods are employed.

[33] According to economics theories, everything that may be merchandised, except work, is a *"good"*. Land, water, living beings, manufactured objects, as well as grenades, are *"goods"*.

manufactured items become rare and expensive, generating a growing but restricted market.
And, mostly, audiovisual merchandises rise. On one hand they are the ones which fill up the two principal human senses, vision and audition, creating both an almost total simulation of in-motion reality and a hypnotic-like effect, hence being very apt to diminish boredom and to support behaviour transference mechanisms. On the other hand their relative production cost is cheap, as they reach millions of persons; their consumption cost is also very cheap. Permanent television and audiovisual production and consumption result on an ever-renewed variety of simulated or media virtual reality, which configures an alien but present world. This one tends to be "perfect" as it is always readapted to spectators' wishes, to be sold. By these reasons, huge crowds live part of their daily lives absorbed in this audiovisual world. Therefore, television does never stop.
Simulation needs permanently to increase in intensity to be effective and stimulating, reaching spectacular levels. This context of widespread simulation of activity, life and reality itself among mass consumption societies has led Debord (1967, 1988) to classify them as *societies of the spectacle*. But, basically, they remain *prohibitionist based societies of mass production and consumption of objects, images and abstract features*, which I call more simply *societies of objects* (Galhano Alves, 1995, 2002).

X
Dependency status; Conditioning

Till this point we saw how most people of these societies has became almost totally dependent of work, money and consumption to accomplish their food & energy and attachment needs. Or, what is the same, how most territory and lands, natural resources, food, raw materials, people and things have became merchandises and tools for production' and capital growth. This *dependency status* is not only the condition of proletarians; it is the main condition of the whole social superstructure which concerns all individuals, as all are interdependent, including market-orientated landowner farmers, industry owners or businessmen. Marxist and Leninist class-struggle analysis did not take in account such structural dependency, resulting on a simple change on the oligarchy that controls resources and work, keeping mass dependence for capital growth. It even increased mass dependency and submission by "proletariat party dictatorship", which meant the abolition of democratic civil rights and individual freedom.
Also, after several generations of urban life, among abiotic environments, most humans do not know any more how to survive by themselves. They do not know any more how to cultivate land, grow crops, make and use tools, raise cattle, gather, fish, hunt, build-up houses or other vital structures. Neither they know any more how to manage and use natural resources to provide vital and superfluous needs, nor do they know any more how to live among natural environments. Living among total or high biodiversity requires a large amount of techniques and knowledge that have been developed through millenniums. Human communities that live in such humanised ecosystems even know how to react safely when one encounters a tiger, a lion or a grizzly bear (Galhano Alves, 1995, 2002, 2007 b, 2007 a).
Moreover, chain atomisation of productive activity has led to individual loss of knowledge and skills. Most of people have became unable to accomplish all the steps needed to produce whatever item, by carpentry, masonry, pottery, metallurgic, textile or other handicraft technology. This includes techniques that were common to all humans,

being a distinctive skill of the species; for instance, now very few humans or human groups know how to produce fire by themselves[34].
Therefore, a massive and historically very quick loss of knowledge takes place. Unlike what has been the norm through all epochs and civilizations, the basic or detailed information, techniques and systems that have been developed by humankind to survive and to adapt to natural landscapes, to use and manage resources, to improve living conditions, became unknown or unusual for most people. Besides, an increasing amount of these skills is disappearing forever, as the remaining people or human groups who still knew them are absorbed by industrial structures, undergo environment change or just vanish.
Paradoxically, on one hand scientific data and knowledge increase, industrial technology rise and an ever-growing amount of information, data and news on all kind of subjects and matters are permanently propagated by media, education or informatics ways, reaching almost everywhere. But, on the other hand, the range of techniques, skills and knowledge effectively known by individuals decreases, reaching a bottom level unable to ensure their own existence nor of their nearby group.
In such conditions, in these societies the dependent status of most humans results from deprivation of free access to vital and natural resources, by land property regimes and physical distance, but it becomes also linked with the fact that they do not know how to exist outside those economic and environmental structures.
Having been formed through their existences and during several generations inside those structures, their behaviour systems are configured to adapt to it. Individual skills are formed to survive in-there, to be able to do a specific range of actions and tasks that fit into artificial urbanised environments and in a mass chain production network, which require always more specialized capability. Also, attachment conduct became in need of permanent and varying consumption. Values and cultural representations became mimicry of this human-made abiotic, competitive, material and abstract background. Most of these skills, behaviours or values only are useful or have a sense as they fit into this background. But, as they shape and fill up essential parts of each individual existence, they tie people to the whole mass production and consumption structure by intrinsic dependency on it. Hence, most people become intrinsically *dependent* on urbanised and abiotic environments, and on the triptych work, money and consumption.
The single fact that each individual and his nearby group have became unable to survive by themselves implies such intrinsic dependency status. I must say that, as Bowlby pointed out, "dependency" indicates the degree on which an individual is subordinated to another one in order to secure his survival. Dependency is absolute in the moment of birth and decreases more or less gradually till maturity (Bowlby, 1973, vol. I). In fact, in humans, as in all primates, mammals and other classes species, dependency is mostly the status of young immature individuals, who are unable to ensure their survival and autonomous life[35]. The ones who are dependent are the child.
Thus, in the depicted social and environmental structures, the practically total dependency condition of each individual does correspond also to a phenomenon of mass' growing infantilism.

[34] Presently, the villagers from W National Park region (Niger) are one of the rare examples of people still able to produce fire by themselves. They light it striking sparks from one jasper hard-stone and a tempered-iron handle, that light a bit of wild vegetable wool and then dried brushwood, but they do not light it knocking two stones (Galhano Alves, unpublished field research notes).
[35] Childhood and puberty are the most dependent phases of life. Normally, human puberty ends at the age of 13-15 (Bühler, 1962).

Such situation leads to a high collective susceptibility to behaviour conditioning, manipulation and control. As most people became individually and structurally dependent, their vital and attachment needs can't be satisfied unless by indirect ways, entailing work, money and consumption, by which they can get merchandises to survive and balance boredom. Moreover, as common life has become imbibed in simulated and virtual activities and realities, which must change and increase their spectacular effects permanently to be effective, single changes on the contents and parameters of such realities may act as a metamorphosis of the whole reality. In such context, all kinds of *conditioning* techniques become effective towards huge masses of people.

It is known that, among humans as in the other animal species, conditioning may be done by imprinting and by reaction to negative or positive conditioning stimulus, natural or formed, that reinforce a particular reactive or operative behaviour. Such modifications on individuals' behaviour tendencies may be formed by repetition of conditioning stimulus, until the intended behaviour is learned and executed in a particular situation. A conditioned behaviour may also be erased by stopping its conditioning stimulus repetition. Conditioning effectiveness level depends mostly on motivation and on stimulation frequency. Motivation is higher when a positive conditioning stimulus satisfies a need of individuals, balancing a deprivation state. These processes may also be used in complex sequences, conditioning in time several and successive reactions or operations, moulding individuals' behaviour towards a specific goal. Besides, negative stimulus, which produce escaping and avoidance conditioned reactions, may be used as punishment to decrease or stop unwanted behaviours. Obviously, conditioned behaviour is better incorporated and accepted by individuals by moulding techniques than by aversive techniques (Landauer, 1972).

Thus, we may see how susceptible to conditioning can be human beings in the above described economic and environmental structures, by these or more sophisticated methods. Conditioning is a basic mechanism on learning, both among child and mature individuals. Normally it is more effective on children, as they are in a learning' and dependent developing phase, lacking a wide range of references. Although, in those societies, the ever latent and real possibility of deprivation of vital or superfluous needs produces dependency, stress and distress, facilitating the use of positive or negative stimulus in order to control the whole society behaviour. Moreover, collective permanent need of consumption of objects and of ever-renewed variety of simulated or media virtual reality, which may diminish boredom and support attachment behaviour transference mechanisms, submerges individuals in a fake reality. This one is in permanent metamorphosis, because to be effective it has to be in movement[36] and to has also to be even more spectacular as the real living world itself. Even if its movement and spectacular effects are a simulation happening in an unchanging and monotonous subtract of inert artificial structures, objects, images and sounds.

By these reasons, in these societies, the collective dependency status and the immersion in a human-made, unnatural and simulated reality facilitate mass manipulation and control. It maybe also an intrinsic need of such social structures, as work and competition had become the core of social activity, subjugating all other kinds of social relationships. Thus, social cohesion and directing can't be without massive control methods and simulated goals, which must be spectacular enough to pull together huge crowds of individuals. Otherwise, risk of social implosion or untidy drift could rise.

[36] As Landauer (1972) pointed out, *"apparently animals and humans prefer a world where little changes that do not scare anybody take place and not a world where everything is always constant".*

This manipulated and, in a large amount, simulated dynamic, reflects both in everyday life and in main social events. Conditioning moulding methods may be used by ruling groups in sophisticated ways. During 20th century, Leninist regimes often employed them to manipulate collective aggressiveness towards an intended target. For instance, in 1968, Czechoslovakia' Prague Spring democratization process has been suppressed by Soviet Union and Warsaw Pact armies, in the night of 20 to 21 August, putting an end to Alexander Dubcek leadership. New rulers, headed by Gustav Husák, had military control of the country, but it was difficult to have total social control, as the whole nation was against the occupation regime and had lost the faith on communism. To purge opponent individuals and groups they would need loyal people who could relay power, aggressiveness and terror among the population. Such conditioned aggressive and persecution behaviour has been formed by a two steps complex method. As Kundera (1983) points out, first they organised a media campaign against (provisional) non-human living targets to which normally people have strong attachment links: animals and pets. Newspapers published countless articles and readers' letters demanding doves' extermination in the towns, and doves have been really exterminated. But the main targets of the campaign were the dogs. In spite of the military occupation, newspapers, radio and television were chiefly saying that dogs are unhygienic for streets and gardens, dangerous for public health, useless and, moreover, must be feed. People began persecuting dogs. One year latter, when collective aggressiveness was entrained and reached psychosis level, *"it was pointed at its real target: men. Dismissals, arrests and trials began"* (Kundera, 1983).

Identical methods have been formerly employed in Soviet Union (with dogs). In China, during Maoist "cultural revolution" (1966-1976) fear from microbes has been disseminated, stimulating suspicion and persecution behaviour. During this period, Beijing students used to put on medical masks whilst dancing together in parties, to avoid invisible microbes' danger, while, as "red guards", they search, denounce, kill or led to suicide "hidden and old habits' revolution enemies".

Endless examples of this kind of main social conditioning can be found in contemporary mass societies, whatever they are collectivist or "liberal", totalitarian or pluralist. During "cold war" period, United States population state of fear and alert has been increased by a media campaign alerting for a spurious "imminent killer-bees deadly invasion". Simultaneously, Albania's Tirana radio used to broadcast weekly false reports on armed invasion attempts against the country. More recently, between 2001 and 2005, global broadcasting kept almost all humans, at least during several months, in the belief that "massive destruction weapons" were ready to be used from middle-east against everybody. In 2006, in Portugal, the media and authorities made a campaign against towns' doves, calling upon its control or extermination, in a context of economic regression, poverty and growing social discontentment. Similarly, the global alert on avian flu made by media and (first) by USA government and a few biomedical researchers, leading to global mass elimination of chicken and birds, just preceded the massive bombing of Lebanon in 2006. Maybe these two last examples have no rapport with the former ones, but in a simulacrum world truth and lie do not have anymore a border line.

In such context, it is possible to maintain global masses in a never-ending simulacrum of reality, as reality itself becomes purely abstract, in a world that is perceived by virtual and manoeuvred ways. Such succession of spectacular simulacrums takes possession of all dimensions of individual and collective lives, shaping a drift towards a break between human dynamics and the real world, and such break is also shared by leading classes and political powers.

XI

Moreover, since computer language became dominant, in the last quarter of 20th century, a very important part of interactions among humans are reduced to combinations of *0 (zero)* and *1 (one)* numbers, which are the basis of informatics' language. This is not surprising, because as interactions increase its language must become more basic and also more abstract, taking in account that the zero and the one are probably the main abstract concepts ever thought by human species. Trade exchanges are also mostly processed in such basic language. This is particularly showed by stock exchange markets, where a never-ending drift of numeric combinations substitute real merchandise production and exchange. It is very doubtful that the huge amount of numeric combinations made in such markets and in the other spheres of human life still fit with social and natural realities. In fact, it is more probable that such succession of abstract realities does not have any more a meaning, being based, more than on other reality, just on the abstract world build up by itself. In this point, we may consider that economics abstractions are self made, without having correspondence with real natural resources, productive activities or real human needs. By abstract trade, where abstract numbers multiply themselves in a succession of abstract and random ever-growing combinations, *money* becomes an entity that grows up or decreases in trade value according, exclusively, to the random succession of virtual informatics operations that are made almost at light speed, using electromagnetic waves. Presently, in a single instant, an incalculable number of operations are made by such way, without any logical patron. If such numeric combinations stop, all virtual "economic reality" would fall off, and the whole social and productive structure, as we know it presently, would collapse.

As we saw before, never-ending capital growing is an intrinsic need of such social and productive systems. Although, if in its beginnings such growing was based almost exclusively on exploitation of natural resources, work and consumption, in its present virtual status it became almost purely abstract, distancing it-self from the real status of resources, work or consumption. In others words, money has no more a parallel with merchandise production or exchanges, it started simply reproducing it-self obeying to the structural intrinsic need of capital growing.

May this dynamics have a limit? Such limit can not come from the dynamics itself, as it fuels itself in a virtual basis. Although, external factors may put an end on it; reality is far from such virtual world and from its spectacular effects, even if they almost substituted reality among most of human crowds. In fact, abstract capital growing can not surpass a border, the one on which it reveals its pure abstract and fake reality. Resources' exploitation, work and merchandise production, even if they are purely virtual, need to keep rising, even if for just being a pale evidence of money value and growing. Although, if we may suppose that work and abstract exchanges could last forever, it is not the case of natural resources that are reaching an end. Living species, agricultural soils, drinking and irrigation water, rough materials and energy are reaching a limit of

possible exploitation[37]; nature can not follow human superstructure growing. Also, pollution grows along with nature exploitation, production and consumption, causing the break down of local and global ecosystems' homeostasis. Presently, humanity, and mostly techno-industrial urban societies, consumes each year 25% percent more natural resources than nature's productivity may produce. The drastic rarefaction or end of natural resources is now a present and lasting reality (Galhano Alves, 1994 b), and may be an obstacle that such superstructure will not be able to surmount.
Moreover, as virtual money growing is now in permanent advance to real merchandises' production growing, in every moment its value must be supported by a subsequent real production growing. Future resources exploitation and work are needed to justify present virtual growing. The superstructure race towards the *future* (as an *abstract future*) resulted on a situation in which time becomes out of phase from the present, being relocated in the future. Future merchandise production grow is always needed to support present abstract money grow. In this sense, present work and growing production are out of phase of present needs; they are already burned out in the future (thus such work is called *"dead work"*) to support present abstract money growing, which may also never be supported by any type of productive work, generating a financial collapse on money exchange value. As natural resources can not support present neither future production intrinsic growing needs, and consumption attains also the limits of its spectacular effects, there is a point where merchandises and capital can not grow anymore, causing the collapse of the whole structure. Moreover, living and mineral natural resources' status may not even satisfy human population basic needs, and, thus, such race towards *future* may mean, already or in a near future, a general involution of human living conditions. Social violent rebellions, their violent repression by political powers and great wars will certainly accompany such process, shaping, together with natural catastrophes caused by human activities, a even more dangerous, inhospitable and violent world than the present one. These factors configure a border that the superstructure may not be able to cross.
If production and capital grow stops, or, more probably, decreases until negative numbers (in economics terms), (as it already happens presently in several economic sectors), and this time in a real context determined by nature and not just by financial imbalance as it happened in the 1920 decade, we may ask what will happen to most of humans, who live now in urban and virtual minimal biodiversity environments, in a state of total dependency? Probably, such urban systems will collapse, by lack of basic resources, as food, water, energy or rough materials. Urban populations will then face radical scarcity, and their survival will not be certain. As we saw, those populations are intrinsically dependent on work, money and consumption, and do not know anymore

[37] Living species are vanishing at an average rate of 1 species each 4-8 minutes. About 25% of the ones who remained in 1970' decade (many vanished before, since 18th century) are already extinct, and about 25% of remaining ones are bend to extinction in the next decades. This means that about one half of the world' living species do vanish in a short period of about 250 years. Moreover, more than 60% of the world forests have been already destroyed. Arable soils are regressing by erosion, 20% of the ones existing in 1990 will be no more in 2010. Water consumption is also increasing, even if humanity already consumes more than 30% of the exploitable one in inhabited zones. The seas are becoming salted water deserts, as in the last decades 1/3 of their natural fish production has been fished every year. The planet atmosphere is heavily polluted: in addition to other toxic gases, CO_2 levels already increased more 30% since 1860, causing an increase of more than 1 ^{o}C on global atmosphere temperature since 1880. This leads also to an expected increase of about 1.4 meters on oceans' level. Since 1860, humanity spent more than 10 times the energy she spent during the former 1 million years, using mostly fossil fuel, thus leading to a predictable depletion and end of petrol, gas and uranium in the next decades. Most essential minerals for modern industry and agriculture will be totally depleted before 2100. Simultaneously, human population grow already surpassed planet's carrying capacity on food and other vital items, and will not be able to keep increasing for much more time: global food security index passed from 103 days in 1960 to 54 days in 1989, and to much less at the present (Galhano Alves, 1994 b; Ramade 1989).

how to survive by themselves. They will not have many alternatives unless fighting for survival basic resources, a fight without issue inside urban artificial and inert environments. Most probably, social violence, extreme scarcity and lack of alternative living ways will cause an implosion of urban and techo-industrial superstructures.
A way to prevent and surmount such situation in the near future would be to invert the historical process of formation of present land property, production and consumption systems, that leaded to the huge mass migration towards urban centres. As we saw, land use and property systems are the basis the historical processes that leaded to present and near future situation[38]. Maybe the ideal land use system is a combination of communitary land use with little scale familiar or individual private one. The latter allow each person to make its own choices, and keep his own freedom from the community, if included in a context of common rights on land and resources use. The systems that I described in the beginning of this work are an evidence of this. Although, during the last centuries such systems have been considered generally as backyards and primitive. However, such systems may allow a resources' management compatible with conservation through time of biodiversity, natural resources and ecological balances. They also ensure the possibility of each person or human group to survive by themselves. Most probably, in case of global ecological and social collapse, the ones who will survive and keep a decent life will be those peoples that still keep land resources as communitary, together with family small scale agriculture and other productive activities. Also because such peoples still know how to survive by themselves independently of the global techno-industrial production and consumption system.
May the whole humanity follow such way? The answer may be no, as there are not political, social and ecological conditions for that. Present peasants' political movements are not fighting for restoration of communitary land uses, but for changes on private land distribution or for the control of agricultural production technologies and trade. That is the case of present peasant's fights in Brazil or in France (Confédération Paysanne, 2002; Bové et Dufour, 2000), that have global repercussions in the media and, in a smaller way, in agricultural policies[39]. Although, except some "native peoples" political movements, as Zapatista movement in Mexico, that are not representative of global context, any political or social movement is presently fighting for a reform on land use and property systems towards a restoration of communitarian management and use of land. The "return back to the land" made in Europe and America by little groups of people in the nineteen sixties and seventies (Bison et al., 1994) didn't have neither any significant impact. In few words, those movements are exceptions to the rule, without expression nor parallel in national or global policies and tendencies. Urban social and political movements are also far from such goal. Like through 19th and 20th centuries' history of techno-industrial mass consumption societies, they are more likely fighting for work, money and consumption, or, what is the same, to maintain their present dependent condition. Identically, restoration of communitary land uses is not in the agenda of any present government nor international organisation.

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[38] In this context, we must remember that, as Pierre Coulomb pointed out, *"every change on agricultural policies causes a "crisis" that has deeply affects on political system; inversely, usually a change on political system causes a change on agricultural policy"* (Coulomb, 1994).

[39] Present alter-globalization peasant political movements fight mostly for *"producing better and in other way; creation of new peasant' jobs; environment and natural resources conservation; and ban of genetically modified organisms".* Their strategy includes *"an alliance among peasants, consumers and ecologists"* (Bové et Dufour, 2000). In spite of their fight against property of organisms by biochemical capitalist multinational enterprises, they never mention land property rights.

Moreover, presently it is unlikely that a mass migration from urban areas to rural and natural ones would solve the present and near future local or global situation. In fact, such inversion of the last centuries' migration processes would be possible if several conditions exist: communitary land should occupy most territory, people should be able to survive on land and natural resources, and ecosystems carrying capacity should be able to support such migration. As we saw before, the two first conditions are not; it is possible to imagine social changes that would build them up, but in practical terms they are unachievable. Although, concerning the last condition, the fact is that present human global population is more than 6.5 billion people, in a planet which carrying capacity, according to Ramade (1989), may just sustain durably 1.5 billion people, i.e. the global population in 1850. Thus, a massive migration from urban areas to rural or natural landscapes would just accelerate the present global ecological collapse, as it would cause the destruction of most natural habitats and of the few remaining local balanced cultures and nature use systems.
Moreover, as I pointed out above, most ecosystems are already much destroyed. Only by massive reforestation could vegetation cover be restored, in areas progressively enlarged around those still balanced areas, allowing dispersal and expansion of the remaining wild fauna populations, but such actions are not implemented until now, nor are in the agenda of any present political will.
As I mentioned before, Pierre Coulomb (1994) pointed out that *"in all the present industrialised countries, including the most recent ones (the new industrial countries of Asia) the establishment of a modern property right, the individual or private one, preceded (or has been concomitant with) the beginnings of industrialization".* Such historical process, with very ancient roots, is now coming, most probably, to an impasse, by the social, psychological and ecological reasons pointed out in this text. Present techno-industrial mass production and consumption societies, and its social and political superstructures, are born from mass deprivation from free access to land and its natural resources. Such process was made, as I pointed out above, by the plunder and destruction of communitary territories and resources, in a bloody sequence of violence, terror, massacre, fiddling and exploitation. Most probably, it will end in the same way, letting for the *future* a much poorest, violent and sad planet that it was once. As Freud (1930) wrote, *"a real change on human beings relationships with property would be much more helpful than any ethic orders".* Communitary land use systems, together with little scale familiar "private" ones, allowed ecosystems preservation and sustained humankind during most of its evolution. Their maintenance among some present human groups and regions has a real political and ecological value for present and future human and all other species evolution. But for crowds of people, anxiety on the future is real, and it maybe just a symptom of a sad reality that will not have a happy end.

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