

**THE WORLD
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An Inspiration for a Central European Report
to the Club of Rome and the Millennium Project

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*Dedicated to the Memory of our distinguished friends and colleagues,
Josef Vavroušek and Klaudius Věčeník who are no more with us.*

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The topics you are concerned with, including global civilizational threat, sustainable way of life as a spiritual and civilizational challenge and our responsibility for global ecological challenges, are certainly not the everyday content of thoughts which usual citizen dwells upon, whose mind and behaviour are attacked by hundreds and thousands of practical trivia. Our ability to stop and examine the deeper context of our constant effort is then more and more important.

I believe, that you are one of the ones, who successfully strive for that insight, and I wish you would also inspire others to seek a broader context more and more often. I also wish that there were more people who would try to see further than to the horizon of their habits and usual ideological formulas, which sometimes grip our minds and our lives too strong. They urge us to think so-called practically, regardless of other people, other countries, other continents, other generations and even other beings, the nature and the Earth.

Václav Havel
President of the Czech Republic
and Member of the Club of Rome

(a fragment from the letter sent to the participants of the International conference "Perspectives of Sustainable Way of Living", organised by the Society for Sustainable Living in Olomouc, Czech Republic, January 1997)

Instead of the Prologue

Central Europe – a Victim, Culprit or Both?

(The Quest for the Central-European Dimension of Sustainable Life)

by Mikuláš Huba

The end of a fateful division of Europe by the "Iron curtain", which passed right through its middle for forty years, also brought the revival of interest in, and discussion about, the phenomenon of Central Europe. From a geopolitical point of view, Central-Europe disintegrated with the end of Austro-Hungarian monarchy. The Treaty of Versailles made it a part of the so called "sanitary cordon" which was supposed to protect, and be protected by, the winners of World War I and, at the same time, to separate two potentially dangerous powers – Germany and Russia. As it came out twenty years later, this cordon, or rather fender, did not save anyone, nor did the powers thoroughly defend it. The area served rather as a kind of a laboratory to test a penalty-less violation of state sovereignty, aggression, mass oppression of human rights, and the unreality of security guarantees. The second blow, even more fatal than Versailles, was delivered to Central Europe by the Yalta agreement, which divided Europe between Stalin and others. The dismantling of Central Europe was completed by the establishment of economic and military-political blocks – NATO, Warsaw pact, The Council for Mutual Economic Help (RVHP), ECEU.

The phenomenon of Central Europe, characterized by more than just its location in the middle of the old continent, is evident at least from the times when the Habsburg monarchy was constituted in this area. Some historians place the origin of classical Central-European state formations in the time of the Czech kingdom – under the reign of Charles IV, the Hungarian Kingdom of Matthias Corvinus or the Polish-Lithuanian Kingdom of the Jagels. Czechs and Slovaks would probably appreciate if the Great Moravian empire was also listed in this enumeration...

However, the history of questioning the concept of Central Europe is no less long than its rediscovering. Some people find this concept just a trick in order to dissociate from allegiance to the eastern Soviet empire in the years 1945–1989. This attitude has though, after the fall of the Iron curtain, changed to a "political kisch", or an advantageous marketing operation. In

this context, Lajos Grendel (1997) wrote, "Desire and nostalgia for the West find their expression in the revival of the idea of Central Europe. In this sense, Central Europe lost its topical relevance after 1989, and as integration of western Europe in this area proceeds, Central Europe will be still less necessary until we all forget about it". According to Grendel and people who think likewise, while allegiance to Central Europe was recently emphasized with the aim of a desirable differentiation from the Russian or Soviet eastern block, now it can function the other way round, counterproductively, as it can slow down or even question integration of this region in European structures. It is also common that most writers find Central Europe to be an illusion or ghetto, unnecessarily restricting exchange of ideas across the whole Europe. This attitude results in the absence of a generally accepted definition of the phenomenon of Central Europe.

Nevertheless, when we get on a train e.g. in Lvov and we travel via Krakow, Brno, Bratislava and Győr to Zagreb, via Budapest to Brasov or Vienna and Graz to Ljubljana, the view out the window of railway stations or towers of churches will always remind us of being in the same cultural-historical area. The common spirit of this area is still alive in spite of the ending of wars and revolutions, defined by hectic construction and repeated liquidation of not only political regimes, but also whole state formations.

Looking at this issue from the viewpoint of geometry, or the so called geographical middle of Europe, as a point on the map, in which it would be enough to thrust the tip of a compass, set the appropriate radius and make a circle, then the circle would encompass the total area only of Slovakia, Czech Republic, Austria and Hungary. The remaining countries would only belong to this circle partially (north-west Poland would incline to western or northern Europe, and north-east Poland to eastern Europe – depending on the historical sphere of influence of various recent or more distant past powers). Allegiance to Central Europe can apparently be claimed by western Ukraine including Lvov, the very northern part of former Yugoslavia (Voivodina, northern Croatia and most probably Slovenia, though it is situated on the crossing to southern Europe), from Italy then by at least southern Tyrol and the surroundings of Terst, from Germany by Bavaria and perhaps also Saxony and Brandenburg, from Switzerland at least by its eastern, mostly German speaking part and finally, by Transylvania (to the south-east showed-up peninsula besieged by Balkan).

If we considered only state formations as units, then we would probably agree that Central Europe is constituted by the states of Vissegrád Four –

Czech Republic, Slovak Republic, Hungary, Poland – plus Austria. Directly after these countries (according to results of a public opinion poll carried out by the MISA agency in both the Czech and Slovak Republics in 1996) follows Ukraine as one among the countries belonging to Central Europe.

The authors of the project "Sustainable Development for Central Europe" gave priority to Germany rather than Ukraine, probably thanks to the fact that the project is, to a considerable measure, based on statistical data which are traced in Germany much more thoroughly than in Ukraine. The last partner which usually actively claims its membership in the family of Central-European states is Slovenia. While membership in the Central European Free Trade Area (CEFTA) is distinguished similarly, the oldest of similar regional associations – Central European Initiative (CEI) – has expanded the number of its members from the original four to the present eleven.

Another interesting indicator to determine European west, middle and east, is the sequence of the establishment of universities, and related to that cultural and educational differentiation. A typical period for the establishment of the first universities in western Europe is 11th–12th century, while in central Europe this process went on from 14th–16th century, and in eastern and south-east Europe only two-three centuries later.

Similarly to various other phenomena, Central Europe can also be more easily distinguished negatively rather than positively – as a changing area between spheres of influence or threat, represented once in the past by Turks, then by Swedes, Germans or Russians. In the words of Milan Kundera, Central Europe is an "indefinite area of small nations between Russia and Germany". In this context, several authors emphasize the fact that the idea of Central European coherence – no matter if perceived as an alliance of destiny, economic solidarity or a commonly shared cultural conception – was always tied to feelings of threat. The most recent initiatives of the so called Pentagonal or Vissegrád Three (later Four) also belong in this category, even though the direct jeopardy of aggression is replaced here by the indirect, though very realistic, threat of lagging behind the more developed West and an absence of a search for ways out.

What should the world feel thankful to Central Europe for? Central Europe was always a crossroad of business routes and military expeditions; an area where since long ago several ethnic groups and religions met, fought with each other, and finally assimilated. It was a territory, where raids from the East but also from other cardinal points (the Roman empire, Germans, Tatars, Turks, Swedes, Soviets) were halted or neutralized several times. At

the same time, it is an area in which both of the greatest wars up to now became worldwide, where the largest concentration camps existed before and during World War II, and where the greatest forced displacements of inhabitants from their traditional homes were carried out during and after World War II. However, it is also a place of significant anti-feudal (1848) and anti-totalitarian movements in 1956, 1968, and 1989.

At the same time, a lot of Nobel-prize winners, famous scientists, artists, architects, philosophers and theologians, or religious representatives (including the current head of the Catholic church) come from this region. And even if they were not directly born here, this region was homeland of their parents, who later escaped from totalitarian regimes to the west, especially to the U.S. On the scale of professions, nuclear physicists and cyberneticists stand out beside biologists, physicians, psychologists or psychoanalysts, civil engineers and philosophers (eco-philosophers included). Revolutionary and creative spirits, ingenious authors of instruments for accomplishment of their plans, and no less ingenious authors of diagnosis and therapists of victims of megalomaniac projects also lived here.

If something as a common mentality of such a diverse environment as that of Central Europe exists, then it is probably marked by the phenomenon of continental dimension – something like “boiling in one’s own gravy”, which, in the 20th century, is even amplified by a syndrome of barbed wire. Other symptomatic features are pogroms, “ultimate solutions”, forced displacements and mass emigrations (if not physical then at least spiritual), conjoined with worrying nostalgia, and many times, also with tormenting self-reflection. This fact justifies a statement of the French historian A. Mares who said that “a lot of Central Europeans, brought up with the experience of wars and the Soviet era, do not see Central Europe as a place of circulation, but rather as a “pot” – a place where one cannot breathe, without any openings, encircled by great powers and constantly confronted by them”. Within this space, perception of reality was also influenced by traditionally rampant and commendable bureaucracy. Hungarian writer Lajos Grendel, who resides in Slovakia, says that the Central European zone which stretches between the Soviet Union, and the more recent EU, and which consists mainly of small, and at the same time multinational states, has after 1945 moved even more towards the East and found itself in the Soviet interest group. According to the cited author, symptomatic for this area are: multiculturalism, nationalism (somewhere hidden under the surface, elsewhere expressed in bloody conflicts), non-existing modern

national and societal self-definition, chronic crisis of identity and related to that value of chaos, or bluntly, a value of nihilism, severance of natural historical development which comes out and adapts to given conditions of the area. The consequences are: liquidation of citizens (as a stratum and also as an attitude) and elimination of civic values from tradition.

On the other hand, what also seems symptomatic for Central Europe (maybe thanks to its effort to face threatening absolutism and “ultimate solutions”) is the constant revival of moral imperatives and canons in contradiction to strengthening moral and epistemological relativism, accompanied by expressions and feelings of absurdity and decadence. Excesses of pure idealism are repeatedly suppressed by raw materialism – whether “dialectic” or simply consumption-like, so that its opponents again attempt to unify under the flag of ideals, with the help of a myth of common culture, idealization of the past and the heritage of numerous great fellow countrymen.

It seems that with the year 1989, the main doctrines which directed the organization of Central Europe in the 20th century are losing their topical relevance. This concerns not only the Yalta system, which divided Europe to West and East, but also the Versailles system. What is going to replace them? What kind of “organization order” will be applied for a new organization of this part of Europe? What kind of principles will it be established on? To what extent will these principles be in accordance with sustainability principles?

A political scientist J. Rupnik said in one interview, in 1993, that Central Europe so far (in comparison to the chaos which exists to the south and east of it) seems to be an oasis of stability. In his opinion, the transition to democracy and market economy has been most successful here out of all post-communist countries. Still, the problems of Central Europe remind him of the situation after 1919, when the Versailles system enabled the establishment of small states with large national minorities on the ruins of the Austro-Hungarian monarchy (based on Wilson’s principles of self-determination of nations). The issue of national minorities not only weakens democratic institutions, but it also causes tensions between neighboring countries.

Western Europe considers Central Europe to be a strategic zone endangered by destabilization partly from the Balkans, and partly from the periphery of the former Soviet Union. If that happened, both the Slovak and Czech Republics would harshly pay for that, since nobody would like to import the conflicts of Central Europe. According to Rupnik, replacement

of the Yalta and Versailles systems is primarily a safety question. Therefore, the states of Central Europe should be democracies because democracies do not go to war with each other. But, it is impossible to constitute democracy and sustain democratic institutions while considering the economic (or environmental either – note of the author) debacle.

The sense of Central European discourse, the search for ways of new political and safety structures, questions of economic integration as well as constantly revived attempts to deepen cultural and societal cooperation, cultivation of mutual solidarity and tolerance, or even the common development strategy can also be seen in the search for a paradigm of pluralism and support to the transition or formation of an evolutionary link in the process of building a common Europe. This perception of Central Europe is also a means of resistance against a revived wave of nationalism. Face to face with Bosnia or Kosovo, it is a challenge enormously topical and important.

Central Europe was always close to wars and therefore its countries armed themselves. After World War II, the Soviet empire fastened on to the armament tradition in this area. It went so far that besides factories of heavy or so called special machinery (a code name for manufactures of arms), most activities of the national economy were directly or indirectly related with the interests of “protection” of the state and the system: from producers of components for “sewing machines”, which could never be assembled into anything other than machine-guns (a well-known aphorism of the 70-ties – note of the author), to women in cooperative farms, who in periods of bad crops, sewed haversacks for gas masks.

In the heavily armed countries, much steel, aluminium and other products of heavy and stained metallurgy, as well as products of heavy chemistry, are needed. Large-volume substrates need to be transported and thus, cargo traffic is developed. Much concrete is also necessary – if for nothing else than at least for construction of roads, airports, barracks and anti-aircraft shelters. Cement for its production, recovered from limestone, is relatively abundant in Central Europe. Everything that has been mentioned is immensely energy intensive. Therefore, power plants are built – classical, nuclear and hydroelectric. The larger they are – the better. Again, cement and steel are utilized for their construction. Countries which build war, and communism and at the same time try to “catch up with America” need a lot of everything. The quality of consumer goods does not really matter, and similarly, the health of the people does not matter much either. What

matters even less is the health of the environment and the natural structure of the cultural landscape. Since there are still more people, and competition in armaments is ever more demanding, it is necessary to produce more and more, to draw on more and more natural resources and consequently produce more and more wastes.

Moreover, Central European states during most of 20th century are more objects than subjects of history, forced to do business at once for the Third Empire, and other times for the socialist camp. Besides that, the production (and consumption) pattern mentioned above fully corresponds to ideas of the centrally planned and realized economy, which is based much more on ideology and political interests of military-industrial complexes than economic effectiveness, satisfaction of human needs, not even speaking about environmental friendliness.

During the totalitarian regime (which dominated most of Central Europe for fifty years), all of this was confronted with: the historical memory of people (reaching prevalently into the more democratic history in the period between two wars), the acclimatization to displeasure and the survival strategy of (at least) passive resistance, a sound educational level, some flow of information from abroad, contacts with abundant exiles, partially maybe the influence of religious education and folk traditions, the mutual balancing of tendencies towards nationalism and cosmopolitanism, and last but not least, a sense for black humor – so symptomatic for Central Europe.

Ecological or environmentally oriented alternative movements – especially in this part of Europe – also became significantly involved in this stream of positively oriented, anti-totalitarian, independent, and non-violent public events. Besides environmental issues, they gradually became engaged in other related issues and activities of social, cultural but also economic and political character. For all of them, let's mention at least a protest (originally ecological) movement – the Danube Circle – which in the second half of the 80-ties concentrated, in fact, the whole Hungarian emerging political opposition around the issue of opposition to the anti-ecological waterworks on the Danube river between Bratislava and Budapest.

In 1968, the situation was yet premature, but in the 80-ties, the Soviet block clearly began to lose breath. For a while, societies still ran somehow – through inertia, so to speak, captured by the idea of mandatory growth. Then however, economics, environment, health conditions of the population and, eventually, also the political system gradually begin to fail. At the same time, more and more analyses and documents which accurately reflected

reality became available. In spite of limitations and bans, tabooed facts became clear not only to experts, but also to part of the general public. Initiatives of conservationists and other groups mentioned above played the role of a catalyst in this movement. On the other hand, increasing environmental awareness of the population gave them real authority, strength and influence in society. Objective and subjective reasons resulted in an increased awareness of the necessity for change, readiness to undergo this change, and even to accomplish it.

As the environment concerns everyone, as it can hardly be ideologically manipulated, and as it is relatively transparent, it became (as explained above) a more or less tolerated vent of the growing political tension in most Eastern and Central European countries. At the same time, the environmental movement became a platform which – without excessive political risk – associated not only professional environmentalists or dedicated nature conservationists, but also other people who were active in the society and thought independently. In some countries, including Slovakia, the movement of voluntary nature conservationists thus became at least a partial substitution for lacking political opposition. Coincidentally, there was a culmination of the green movement in Germany and a strengthening in Austria. In addition, Austria experienced in the 80-ties two of their largest environmental campaigns: the referendum about nuclear energy and the campaign for the protection of Hainburg forests against the construction of huge waterworks on the Danube.

The argument that the environment does not recognize borders is reflected in the fact that international cooperation dealing with its protection gradually develops. Let's mention several examples of cooperation centered around particular environmental issues: air pollution – e.g. the so called Black triangle, nuclear power plants – mainly after the Chernobyl accident, the Danube – from Hainburg to Gabčíkovo-Nagyymaros, the Tatras, Krušné hory, the Beskids, pollution of international rivers... With the help of international environmental organizations, the first Eastern European network of conservationists was established – Greenway, and a renowned international organization, Friends of the Earth, began to show more and more interest in this part of Europe.

Right away after 1989, significant environmental organizations in this region became member organizations of Friends of the Earth. This fact might also have initiated a belief that it will be exactly the organizational basis of Friends of the Earth – Europe which would enable the realization of

an ambitious Europe-wide campaign aimed at spreading knowledge about effective usage of environmental space from western Europe to its central and eastern parts. Since 1994, all Central European countries became gradually successfully involved in fulfillment of this intention, regardless of what criteria is used for territorial definition of Central Europe.

The key notion of the whole concept is environmental space (ES) defined as a total quantity (capacity) of resources, including space, available for use by a given subject (a country, community, individual) and in the given space and time, in a sustainable way. The initial reference time horizon was 1990, and the final target horizon is 2010 (for some commodities it is the year 2050). What are the results of a comparison like? Evidently, the largest consumer of ES per inhabitant and country is Ukraine. Then follows Slovakia, just slightly before the Czech Republic. Average values of consumption of ES within the region is illustrated by Austria. Somewhat smaller value shows Poland and clearly the smallest one – Hungary.

Naturally, the whole method has numerous shortcomings. Besides other things, it is the fact that indexes, and thus also order of the countries in various indexes, are attributed the same weight but also (and maybe especially) the fact that the choice of indicators is not representative enough to be able to give a complex picture of reality. In spite of these shortcomings, the procedure mentioned above enables the formation of a rough idea about consumption of natural resources, waste-production, land-usage, nature conservation and other aspects of using environmental space in individual Central European countries and the region as a whole. It also provides a means for making some other implications.

Generally, we can state that the Central European region in the early 90's (and we should add that up to now) many times exceeded (and in a limited extent, still exceeds) the limits of consumption of ES. The reason is especially the high consumption of non-renewable resources. While consumption of sources of energy is higher than average for the EU, it is comparable as far as other sources are concerned. Significantly smaller than in the EU was the consumption of renewable sources of energy (with the exception of Austria with a level of consumption of non-renewables almost corresponding to the final recommendations for the year 2010). Much better is the situation in the sector of land-usage, where the acreage of built area in the region was considerably lower, while the acreage of protected landscape areas was considerably higher than the average for the EU.

The idea of overall (in)efficiency of national economies in individual countries will become remarkable when indexes of GDP creation will be considered as well. It is a fact though, that Austria with an average consumption of ES within the region had in 1990 a four to six times higher GDP per inhabitant and year in comparison to countries of the former Visegrád Three (now Four = V-4). On the contrary, Ukraine with the clearly highest rate of consumption of ES, had a GDP per capita and year one category lower than Austria. A significant indicator of the quality of life in a particular country is life expectancy. Similarly to the previous case, also here the countries of V-4 significantly fall behind Austria – by 5–6 years, while life expectancy in Ukraine (using the average from the former Soviet Union) is shorter even by 9 years.

How has the region of Central Europe – using the optics mentioned above – developed in recent years? Development trends in our orientation towards or from sustainability are ambiguous. On one hand, most environmental indicators have improved, quite a few environmentally damaging and economic loss – generating operations were closed down, energetic and raw-material efficiency has partially increased, life-expectancy has prolonged and last, but not least, access to information has improved. On the other hand, in connection to adopting patterns of consumerism, compensation of frustration from dozens of years lived through with a feeling of relative material insufficiency, the placing of individuals before societies, gradual dying out of the social state and the like, new threats and risks are on the increase. That relates in the environmental sphere mainly to extensive development of individual automobile transportation and growth of quantity of communal wastes, in the social sphere to the growth of social-pathologic phenomena and also increase in social disparities, and in the economic sphere, for example, to the growth of foreign debts.

Even though much has improved “on paper”, the real situation is worse. The conviction that future positive development is simply impossible without a significant improvement in the state of the environment (which has become a generally accepted axiom and also a strategic intention in western Europe), has not yet become generally accepted in Central Europe. Likewise, Central European countries do not quite recognize that the country or the region which will apply this strategy most effectively in practice, will gain an advantage over the others, not only in the environmental sphere, but also in the economic, social, and political spheres. At the same time, it should become clear to these countries that crucial increase in “eco-efficiency” is

just one side of the coin. The other one is fundamental strengthening of the approach of “eco-sufficiency”.

In conclusion, it can be stated that Central Europe represents – as far as devastation of the environment and measure of inefficiency of utilizing natural resources are concerned – one of the most negative examples on the map of the present world. On the other hand, Central Europe represents certain values, both environmental and cultural, thanks to which orientation towards a more sustainable way of existence is well-founded and can potentially be successful in this region. However, the change in orientation can only be accomplished in the case of a favorable coincidence, and under the condition that all elements of the society in Central European countries intentionally participate, and that strategically oriented international help (see e.g. (quasi) Marshall plan of environmental revival of the region designed by Al Gore) will be provided.

The unique life experience of a Central European intellectual interpreted in a specific “Central European” manner is, and always will be, interesting for the whole world community. This collection of essays of the Czech and Slovak authors aims to be a modest contribution in the mosaic of these (self)reflections. What connects these authors is not only the place of their origin or job, but also the increased sensitivity towards nature, interest in environmental issues and the joint search for ways out in the context of the newly emerging global development paradigm of the 21st century called sustainable living. We believe that this attempt will also positively inspire our colleagues in the surrounding Central European countries, and that in a short time, the view of the world – as seen from the middle of Europe and/or perceived by its heart – will become far more extensive and complex.

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Bratislava, Olomouc, January 2000

The State of the Environment as a Reflection of Evolution of the Value Orientation of Inhabitants

(Causes, effects, and possible ways out)

by Mikuláš Huba

Since my student days, I have been concerned about the schizoid relationship of people towards nature and the whole environment with which they come into contact. This standpoint is only partially the consequence of a warped, dual morality of a generation of people whose life experience is exclusively or almost exclusively connected to totalitarian regimes.

Far too often, in my opinion, we have gotten used to searching for the main source of conflict in interpersonal antagonisms; between constituents of different nations, religions, social levels, interest groups, generations and the like. As I have indicated above, I will be more interested in exploring the intrapersonal schism which internally splits an individual - personality.

1. The first schism is man as a part of nature versus man defining himself as separate from nature. This is a specific sort of conflict between monism and dualism: man as a subject versus man as an object (man *in* and man *out*). In the Jewish-Christian tradition, the genesis of this schism is - among other things - also connected to the first people being barred from the Garden of Eden.

2. The second schism, which directly relates to the first one, is deeply rooted in the whole ancient-Jewish-Christian tradition: man as the conceived monarch of nature versus man as a meek administrator of nature, which is a continually popular issue in the search for the optimal measure of anthropocentrism. It is interesting to see how this problem sows the seeds of discord, even within camps of theologians, philosophers and expounders of Christian teachings themselves, and how the identical parables and wordings are often interpreted contradictorily.

Stimulating thoughts on this issue have been expressed by a Slovak philosopher Teodor Münz. Let me quote an interesting part of his text related to the above mentioned topic:

"... the so called "white culture" and civilization is from among all cultures the most combative, the most scientifically and technically advanced, and ecologically the most aggressive. It's given by the historical conditions of its

development. White culture takes ideas primarily from Christianity, which contains elements of the Jewish Old-Testament religion, and ancient Greek idealistic philosophy. From the philosophical standpoint, it can be said that their common denominator is dualism, the divorce of God – Creator from nature and the whole world and His elevation above it. The previous conception of the universe, which is to date still accepted by several civilizations, was monistic and pantheistic. God was present in the world and in nature; therefore, everything, every subject and animal were an expression of His will and both respect for Him and fear of Him didn't allow for the excessive destruction of nature, along with the low level of technical development in those societies. Also, their conception of the universe was in harmony with everyday activities of that time. However, in dualism, destructive interventions in nature are possible because it is not God Himself who suffers, but only soulless matter. Though it was created by God, according to the Old Testament it was created by God from nothing, and therefore it is nothingness. Moreover, according to Jewish and Christian religions, God has given both living and non-living nature to be used by man and He made man Lord of nature. In this way, humanity of the future, mainly the Christian world, gained the right to intervene in nature, to change it, or even destroy it. This attitude corresponded to the combativeness of white civilization, which has obtained, or rather won for itself, for this purpose the highest consecration. Though Christianity always stressed moral and spiritual rather than material values, at the same time it stressed the need for activity in the world. Once again predominantly moral activity, which has been, however, understood since the beginning of the modern age in its own way.

After the ascetic feudal Middle Ages, which turned eyes towards heaven, and which had no industry, the Renaissance re-discovered antiquity – its science, philosophy, and the derivation of pleasures from earthly life. The Renaissance started to imitate antiquity and finally outdid it in everything. Modern natural science disciplines were born, which recognized and used nature under the slogan "knowledge is power". Also modern philosophy was born, which stressed the dominion of man over nature, and which replaced God with man and his brain... According to this philosophy, the only reality was eventually man – God and all the rest was just a form of His existence. In this way, modern man celebrated the triumph of his brain and power over matter."

In the opinion of Erasmus Kohák, the modern age faced the dilemma of which way to go: whether in the way of Cartesian, positivistic anthropo-

centrism, which aims towards gaining control over the world, eventually resulting in its dehumanization, or to follow the way of Comenian biocentrism, based on respect for world harmony and all beings deserving respect – not only man.

The opinion that our civilization could have hypothetically taken a different direction, if it had let itself be inspired more intensively by different religions, philosophies and cultures, which principally didn't contradict its previous development, can be supported by E.F. Schumacher in several sentences about the relationship of Buddhism to nature. "Buddha teaches that we should respect and care about not only living creatures, but also trees. Every Buddhist believer must plant a tree several times in his life and look after it until it becomes strong. A Buddhist economist knows that in this way authentic economical development (and not only in the tree industry) can be maintained. A Buddhist approves exploitation of the forest, but only in extreme cases the exploitation of non-renewable sources of energy. Otherwise, he considers such actions barbarian and as violence against nature. According to a Buddhist economist, consuming is just one of many conditions of comfortable living; therefore, he will try to achieve the highest level of satisfaction of his people and, at the same time, the lowest possible level of consumption."

3. But let's return into our reality, to Europe, the cradle of western civilization, and the problems arising from it. The quotation of T. Münz implicitly indicates another schism, which partly tragically, partly productively, marked modern European history, including the history of the relationship of man towards nature. It is the schism of Catholicism versus Protestantism. Using the language of dialectic philosophers, this is a typical example of the unity and conflict of opposites with ambivalent consequences on the relationship of man towards nature. The industrial revolution proceeded most quickly in predominantly the Lutheran and Calvinian countries, while in the Catholic countries, capitalism proceeded more slowly. According to Münz, a believer in the framework of Calvinian teachings defends himself from the threat of reprobation by means of work and activity. On the one hand, work averts his psychological, moral and other depressions, and on the other hand, it creates values, primarily material, which safeguard him in earthly existence. In practical life, the Protestant man begins to rely more on himself than God. In comparison with his Catholic contemporary, a Protestant is much more oriented towards the

earthly world, he is internally and externally more active, enterprising, and adaptable. This corresponds to the requirements of capitalism, in which Protestantism was born, therefore it finds Protestantism to be the most suitable denomination for this system. T. Münz states: "Christian denominations have lost respect for matter and nature in general. Protestantism has taken the Biblical command to subjugate the Earth too much to heart, while Catholicism is too enthusiastic in fulfilling another Biblical command: "Go forth and multiply and fill up the Earth". By celebrating the spirituality, and above all the rationality of man, which is supposedly his privilege, in which he resembles God, we have lost respect for "irrational" nature and towards the rest life in it, but especially towards non-living nature which lacks any mentality or spirituality. Specifically, we have also lost fear and awe towards nature because we have already been safeguarded to a great extent by science and technology against its disgrace... However, it becomes apparent that our temporary independence of nature and dominion over it are premature and harmful illusions. Awareness of this fact can lead towards acquiring of new, higher or deeper awe towards it."

4. Conjoined with the previous schism, and at the same time surpassing it, is another schism of the modern, industrial age – freeing man from traditional dogmas, dependencies, and taboos. Simply said – freeing man from God, orienting man towards atheism, nihilism, absolute-like liberalism, and the loss of faith in the afterlife, transcendence, and in the fact that earthly life is just one stage of human existence. The growing atheistic persuasion that earthly life is the only form of life has direct implications for greater activity, self-realization through changing the surrounding world, materialism, hedonism, the philosophy of disregarding "the flood after us", as well as nihilism, which is often destructive. It can also be said that this schism is caused by a twofold understanding of individual freedom.

This schism is related to a phenomenon, referred to by members of the American green movement as the dominant societal paradigm of the 20th century, called modernism. Governance of a modern society is, in their opinion, based on a mechanistic analysis of human society and nature, a cosmopolitanism that lacks culture roots, nationalistic chauvinism, patriarchal distress, sterile secularization, and monoculture spread by mass-media. An enthusiastic modernist underestimates the value of traditional institutions which strengthen ties among people, for example family, church, community, and ethnic associations. He prioritizes individualistic liberalism. Such an

escape from one's own roots and from allegiance to the association of one's own community allows a talented individual to reform his identity towards the identity of a liberal-minded player of a big game played by a technocratic society and accumulate enticing rewards for his productive behavior. It continues until he asks himself: Where does a system which behaves as if there was no "tomorrow" take us? Modernity – powerful, attractive, enthusiastic – demands from an individual only to become an alien in the natural world, an aggressive enemy of his neighbor in a global world village, an expert in making strictly shallow steps, and a fatal apologist of greed and cool alienation. It's a Faust-like contract we have adopted, having diverted ourselves from the subtle, untouchable dimensions of life which are included in spirituality. The only demonic power in operation is our own ignorant will.

The values of modernity were formed by socialistic, as well as capitalistic national states. It is not surprising that structures of civic resistance in socialistic countries often emerged from the church and that both liberal and conservative churches in capitalistic states are reviewing their position of non-partisan observer with their only task being adapting people to the modern world and not intervening in the course of "progress".

5. A "higher" stage in the evolution of materialism and atheism was brought in the second half of the last century, and during this century by Marxist-Leninist materialism, which was supposedly dialectic, but in reality it was aggressively anti-idealistic, anti-spiritual, anti-liberal, anti-human and eventually also anti-ecological. Construction-mania, modifying nature under the slogan "We will command the wind and rain" became a part of an official, and the only tolerated, ideology which offensively suppressed all the other philosophies, ideologies, cultures or perceptions of the universe as anachronisms of this or that past. In their brazenness, Marxism-Leninism and their expounders go so far as to act as if they had the monopoly on the only *scientific* teachings, while everything else that originated in the history of thinking is in their opinion pre-scientific or pseudo-scientific. The "scientific dimension" of Marxism-Leninism lies partly also in the fact that his followers abuse science and technology for unrestrained exploitation of nature and natural resources.

6. Europe in the 20th century also experienced another evolutionary mistake of human civilization – fascism. Among other things, it was horrible for its aberrant concept of purity – from its imperative of racial purity

through to its indispensable gloves for mass murders. The most up-to-date science was in the service of systematic, industrial, "highly-civilized", "cultural" and "scientific" extermination of man and other living creatures. The world experienced an unprecedented abuse of the ideals of Christianity, culture, and civilization for the accomplishment of a most disgraceful goal. To date, this is the most deformed caricature of culture, occurring right in the middle of the cradle of culture, which Europe conceitedly calls itself. This is "the ideal" source of schisms.

7. After the defeat of fascism and a short temporary pause, power in our region was overtaken by communist totality, representing an active struggle against tradition, which was considered a "pre-revolution relic". This form and conception of the battle had exceptionally universal goals:

- It meant the liquidation of the countryside in connection to private ownership of land, as well as the strong position of the church, the insignificant portion of the labor force, the power of tradition and the greater resistance to novelty in comparison to cities. In practice, it also meant the liquidation of church relics (in terms of ruining religion) along with secular monuments (in terms of ruining the remnants of feudalism and bourgeoisie), but also monuments of folk architecture, crafts and historical structures of the rural country as a whole, to implement the new centralistic-collectivistic forms of economy.
- Similarly, everything somehow related to the pre-revolutionary period in the cities was also ruthlessly liquidated. In the spiritual area, it was the city bourgeoisie and intelligencia, and in the material area, it was the gradual disappearance of entire historical city districts, including public life itself. Instead of a rich structure and diversity of town organization, uniformity and disorder exist. The citizen is driven away from the streets, public areas, cafes, restaurants, clubs and self-help groups into his state or cooperative apartment or to organized meetings of the communist party, and he returns to public space only by force, as a participant in the May Day manifestations or mass-exercise exhibitions.

It can be generalized that all traditional values, including the value of landscape and environment, were designated as the enemy. Stripping people of their roots, intentionally indulging in prioritizing the non-living, alienation in the name of better manipulation, and depriving man of his individuality, were "compensated for" by authorities through the caricature of compulsory optimism. Paradoxically, even death itself became taboo and contributed to the deformation of the real value and meaning of life.

This warped, dual, deformed, schizoid morality was formed under different schemes in different settings such as family - church - school, workplace - pub - political meeting and the like. On the one hand, there was an effort to totally eliminate independence and plurality of opinion, and on the other hand, there was a venting of this pressure by means of family, church, or informal communities. Schizophrenia affected the society as a whole and each of its citizens separately. The internal integrity of a person can only be maintained by the extraordinary strength of an individual, or even personal heroism, combined with the risk of being in the position of a modern heretic.

Schizophrenia of the world-view is accompanied by schizophrenia of individual personality roles which, however, don't occur only in the realm of socialism:

- the private person versus the public person;
- the estranged producer of anonymous goods versus the estranged consumer of anonymous goods;
- the timid, polite, conforming citizen versus the anonymous vandal;
- the so called decent man (good-natured fellow) versus the passive supporter of evil; in the case of rising mass hysteria, also the active supporter of evil;
- the man who desires independence versus the man sticking to dependence;
- the culprit versus the victim;
- the consumer without limitations versus the constantly dissatisfied individual;
- the anxious private owner versus the prodigal user and exploiter of public estates;
- the citizen suffering from communal problems versus the bureaucrat or director of the operation, causing the communal problems;
- the sickly citizen versus the producer of pollution;
- the technocratic vandal versus the lover of nature - a gardener, hunter, etc.;
- the physician bound by Hippocratic oath versus the obedient employee withholding information about the state of public threat (see the case of Chernobyl) and the like.

The diversity of roles one fulfills in life is, of course, not a negative phenomenon in and of itself, rather the opposite is true. Schizophrenia presents a danger only when two roles, simultaneously fulfilled, are

contradictory in nature. This can happen when a man is under the long-term influence of several mutually contradictory pressures without the chance, or with little chance, of an unequivocal choice.

In the light of what was said above, the history of humanity specified in the history of our nations can seem to be the one of continuous decadence, going from bad to worse, a factory with a large-scale production of chaos, antagonistic pressures, mutually contradicting teachings and their purposefully abused interpretations, demagoguery, suppressing personal freedoms, wars and other violence, soulless devastation of nature and cultural monuments, elimination of "remnants", brainwashing, stimulating illusions, alienation of people from each other, from their environment and from themselves. Is it even possible that in spite of all that, a fairly wide level of noosphere has been maintained, that common sense, feeling, solidarity, and conscience haven't completely died out, and that flames of various moral imperatives, or higher moral principles haven't burnt out? Is it not an illusion to believe in the prospect of re-integration of personalities, or even societies around a certain fundamental supporting idea or paradigm which would indicate a fairly promising and universally acceptable way out from the contemporary crisis? Is it not true that there is more and more evidence raising concerns that humanity, led by western civilization, is inevitably heading towards destruction? Do not greater and greater numbers of inhabitants on the Earth devote themselves to pleasures of over-consumption which is accompanied by ever-decreasing resources of the Earth, so that the metabolites of their pleasures are tying the noose around their neck from the other side?

Even if we manage to modify the human conscience, how can we change human existence? Many, including Slovak philosopher Frantisek Novosad, ponder this issue. We had an enlightening lesson during the post-November development about the inertia of the human existence: although ideals and good resolutions gave us wings at that time, the weight of our past experiences mercilessly pulled us to the bottom.

Where should we then search for sources of the so called historical optimism? It is the very history, full of violence and stupidity, which paradoxically offers a certain support because it always managed to place opposite qualities against evil and stupidity – ancient Greek philosophers and artists, Jesus Christ, St. Francis of Assisi, Jan Amos Comenius, Mahatma Gandhi, Albert Schweitzer, Mother Teresa, green and nature-conservation movements – briefly worthy personalities, groups and ideals.

In the words of Erich Fromm, the battle of the wolf and the lamb is permanently inside us and the victories of one or the other hemisphere are only temporary.

Humanity is gradually switching on the brake mechanism. If we analyzed just the last three decades we would find, along with enduring negative examples, also a great many positive ones. However, what is even more important is that from the individual attempts teachings and initiatives something like a new global conscience and longing is being born.

Terminology used by prophets of change – *The Turning Point, The Future Shock, The Limits to Growth, The Third Wave, The First Global Revolution, Megatrends 2000* and the like – also demonstrate this. The magical end of a millennium, the gloomy prognosis of scientists, the realization of the limits of growth – all that has blended in the course of recent decades in a universally felt need for a change – turnover – transition into a different orbit.

One of the ways out is offered by the concept of sustainable living, which has become a new key paradigm. This potential solution will become more prospective if it would manage to integrate the technological aspect of sustainability with a new system of values, and thus conjoin the theory and practice of sustainability in one, organically interconnected whole. It would mean that besides the transition towards new economics, new technologies and ways of trade, humanity will start thinking and acting in a new way. In this sense, institutes such as school, culture, science, mass-media, church, and others face huge challenges and opportunities.

It is desirable to provide a serious analysis of points of intersection of such concepts as: *The Limits to Growth* and possibly other reports of the Club of Rome, *The First Global Revolution* which is a vision of post-industrial society, *The Third Wave* by Alvin Toffler, the notion of sustainable development explored by *Our Common Future, The State of the World* which are annual reports by the Worldwatch Institute, *The Earth in Balance* by Al Gore, the works of Capra and Schumacher, the programs of movements such as greens, conservationists, eco-feminists, new economists, and deep ecologists, as well as optimistic prognoses like *Megatrends 2000*.

To date we have certainly insufficiently analyzed the similarities and differences of the roots influencing the conscience and being of each of us. Simply said, to explore what belongs among the roots of *sustainability* (presumably holism, a complementary relationship between the "male" and "female" principles, eco-centrism, post-industrialism, qualitative development, evolution of systems regulated by negative feedback, but also tolerance,

a participatory approach, balance between the rational and the emotional sphere, intuition, and others), and among the roots of *un-sustainability* (presumably preference to particular interests, hegemony of inductive approaches, patriarchal relationships, anthropocentrism, industrialism, illusion of indefinite and unlimited material growth, progress regulated by positive feedback and others).

In all likelihood, many institutions and activities like science, church, education, philosophy, economy, or politics, cannot avoid re-evaluation and/or new interpretation of numerous fundamental postulates. What is important is that each of them provides positive traditions which can be built upon.

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Freedom Interwoven With the Wheel

by Jan Keller

The automobile is not by a wide margin just a technical device which makes mass transfers possible on such an unprecedented scale. Most of all, it is a device which makes possible – equally on a so far unprecedented scale – mass mystification. From its beginning, the car has been presented as a symbol of absolute individual freedom. It serves the need of the owner to move, while the direction as well as the speed of the movement are determined only by the free will of a driver. This is what makes travelling by automobile different from travelling by train, which has the direction clearly given, and also from walking which has clearly limited speed. Ever growing density of the road network should guarantee that freedom of our automobile motion will be less and less restricted. From this point of view, putting our planet in concrete and asphalt is just means of realization of our freedom and therefore, every attempt to restrain it in any way might be judged as an attack against the most valuable thing we have, the potential and extent of our freedom.

Should this argument be truthful, it would result in the conclusion that the peak of human freedom can only be the planet covered by a thick layer of asphalt from one horizon to the other. Until a similar realm of freedom is discovered by our astronauts far in the distant space, it is our task to bring our own Earth to this ideal state piece by piece. So far, we have been successful only partially; there still exist blameworthy vast areas which have not been liberated by a thick layer of asphalt yet.

However, is the automobile really such a vehicle of freedom as it is presented to be by its producers and sellers? Does it liberate man from shackles by which he was tied before the invention of the internal-combustion engine? In the context of the automobile transportation, what is the relationship of an individual and the system really like?

From the historical point of view it is striking that the development of automobile transportation from the 90's of the last century is identical with the origin of an epoch of organized modernity. The liberal capitalism of the 19th century managed quite well without the automobile and all slogans about emancipation of man and development of the individual freedom were realized in the age of golden era of railway. Since the turn of the century, on the contrary, numerous liberal principles got into trouble, when

organized modernity socially structured the society in the form of large masses identified by class and nationality.

At that time, standardized mass production was developed (with the automobile as its first and privileged product) which was directed for ever growing mass consumption. The whole society begins to resemble one big, half-military organized factory which requires a unique discipline without which the coordination of a huge number of activities would be entirely impossible. The machine character of killing in trenches during World War I preordained not only the machine character of genocide in concentration camps during World War II but also, in the sphere of distribution of social well-being, the machine character of providing social welfare inside the arising social state.

An arising big city is equally an expression of organized modernity as is the whole, newly built network of communications. The modern society at this stage pulls all individuals who inhabit certain areas in organized practices of production and consumption, political decision-making and participation in mass culture. To make this force manageable, a lot of former varieties have to surrender to what connects everyone. The need to manage large numbers of people in a continually more complex society, with more and more developed division of labor, requires half-military organization of management. Right in this atmosphere, the automobile which is presented as a device of pure and genuine individual freedom, is being born and developed.

The automobile, as a matter of fact, became an element which only interconnected individual areas of organized modernity into one and single functional and totally independent whole. It has completed the process of closing the modern society into a compact system operating by its own logic which finds destinies of individuals entirely inferior just from the very technical reasons.

Production and operation of cars has become a true force during this century which drives the economic machinery as well as the automobile growing state power. Since the second half of this century, the automobile industry has shifted in services of the so called free market and its main agents – that is huge, bureaucratically directed trans-national corporations. The higher stage of covering the planet by asphalt in the form of continental freeways and growing density of existing road network corresponds with it.

The automobile industry started a tempestuous phase of economic growth. The automobile enables so far the most systematic and complex way of

increasing the gross domestic product. The income is not by a wide margin originated just by products (manufactured on assembly lines) of automobile factories themselves. To produce automobiles means at the same time to create a mass need in many areas: the need for additional barrels of crude oil and additional gas stations, the need for additional kilometers of highways, new and larger hospitals and rehabilitation centers, new service stations, new insurance companies, new wheel chairs for handicapped, and the need for new and larger cemeteries. To sell a car means to convince the society to buy all this since all of that, not just the first aid kit and a spare tyre, constitutes the obligatory equipment of the automobile.

However, the automobile also nourishes the state and participates in supporting the state power, and it does so as simply as drinking alcohol or smoking cigarettes. In both cases, however, what remains unpaid are so called externalities. An eager driver as well as an eager smoker or alcoholic cost the society after all more than what they invest in their life hobby.

"Automobilists drive for the sake of the state" state the French authors Julien Fabre and Hervé Michael in their book *Halt to the automobile*; "the state receives from them high taxes from buying, keeping and using their automobile, and is therefore interested in drivers owning as many autos and driving as many kilometers as possible". Both the authors state that the state income from fuel taxes and other tax obligations of drivers in their country far exceeds its annual expenditures on the road infrastructure. Pure individualists driving their cars with the feeling of absolute freedom substantially help to maintain the state machinery which should, by their liberal conception, be more narrow, modest, and primarily the weaker the better. It is an especially piquant situation with liberal politicians who have to cover thousands of kilometers every year to be able to attend all of their meetings and convince as many citizens as possible about the need to narrow the state and do away with bureaucracy.

Thus, the automobile driver is sadly mistaken. Just as he thinks that the speed of his driving is an expression of *his* power, and that it is *his* credit and *his* accomplishment, he lives in the very same illusion of freedom of his driving, its unconditional character and absolute freedom. For the sake of this illusion, e.g. a French driver is willing to give away regularly for the need of his car approximately one quarter of his family income what is more than he pays for food and often also more than he pays for housing.

For the same illusion of freedom, drivers are willing to undergo the drill which they would otherwise definitely consider as something utmost

unpleasant. If they are masters of their own automobiles, they are ready to adhere to blowing, they obediently respond to simple gestures, directing signals, and simple pictures of the road signs. And they do all that without any discussion and at command. Freedom-loving drivers are restricted on the roads for technical reasons in a far greater extent than they are used to from their workplace. They succumb to this pressure more or less with pleasure and they perceive the necessary restrictions as a charge paid for their freedom. In the very name of this freedom they succumb to the police-like discipline. This school of becoming disciplined which takes place on the roads 24 hours daily can serve as a model for other sectors too, and its lessons can always be extended to other areas of organized life. After all, why should not we subordinate to the strict authority if (as all of us know) just the further expansion of our freedom is at stake?

The automobile is perceived as a highly prestigious form of the personal possession. This form of ownership is valued so highly and people long for it as much that they are willing to tolerate in fact almost everything. They do not get discouraged by the fact that their own automobile has to subordinate to orders and bans at every step in a scale which they clearly would not stand with any other form of ownership. Even though the automobile is a rather untypical form of ownership, it allows to its owner to live in a fiction of generalized ownership. Sitting behind the steering wheel, one can derive joy from unrestricted possession of space which is at his or her disposal as a function of one's speed. Also, time is at free disposal since it can be saved depending on one's speed. What is really important is the fact that these feelings of being the master of space and time can be equally intensively perceived by a multimillionaire as well as someone who does not own anything at all except for a used car. On the road, even the last automobile proletarian can take part in the game of rivalry; competition who will be the first, strongest and fastest to excess. The more one can enjoy it passionately, the less he or she recognizes that off the road, this game is reserved only for real, not fictitious owners. Maybe for this reason, even at the time of big economic recession in the U.S., affected households did not want to part with their cars.

Generally in this respect, new, undreamed-of possibilities arise. While property really liberated its owners and made them independent in the past, today, on the contrary, in return to fictitious feelings of ownership, it can bind and even succumb them to a far more tough subordination and supervision than is common with other, less private forms of ownership. All

that, of course, happens in the name of growth of their inalienable individual freedom and independence.

Regardless to what is induced to automobile drivers, the whole machinery must definitely function continuously. A great many other, much more important things than subjective feelings of freedom of a driver, depend on that. Aside from remarkable profits of producers and sellers as well as strategic incomes of the state power, it is basically all about employment of people in the society; as a result of technological and organizational development, great numbers of traditional job opportunities have disappeared. The structure of employment was in the course of evolution of the modern society, modified in such a way that without the further massive growth of the automobile industry there would be a danger of a fatal increase of unemployment with all the social and political consequences. To prevent that, it is worth it to reassure drivers about how free, powerful, good-looking, and irresistible they become behind the steering wheel.

The automobile industry offers one from six job opportunities in the U.S. In France, in the broadest sense (that is including the traffic police or editors of automobile magazines), it is almost three million jobs. In Germany, out of 26 million economically active people, 3.6 million men and women live off the automobile industry. Out of this number, approximately 850 000 workers and clerks work directly in automobile factories, the rest are employed in a huge number of firms and offices somehow related to automobile transportation. The only unimportant section works on the construction of new roads and freeways. While in the 30's, 95% of work on at this time the ratio is exactly the opposite and road construction itself does not significantly contribute to the reduction of unemployment anymore.

As a matter of fact, what is left from individual freedom and independence if we deducted those aspects of the automobile industry which are forced by economic, political and social interests? In fact, it is only drivers' chance to identify freedom with something what really does not exit. For example, ordinary vanity can be considered a higher measure of freedom. This would explain the fact that while an average number of people per household in highly-developed countries has been declining since the 50's, automobiles which on average serve fewer passengers get bigger and bigger, and they are usually not determined by the size of a family or gas mileage — it becomes just a matter of prestige. For example, if the choice of an automobile in

Germany would be based on economic criteria, only half the fuel would be used to safeguard the present-day level of automobile transportation as today.

Then, there is a notable group of drivers who identify greater freedom with a higher measure of ruthlessness. The aspect of safety also plays a role when an automobile is purchased. During the last dozen years, technical standards of automobiles have greatly improved. However, that affects mostly those who sit in a car, not pedestrians, cyclists, and kids who are threatened by it. This threat becomes now even higher than in the past because the feeling of greater safety often leads drivers to more hazardous driving. With regards to the mentality of drivers, exhilarated by their safety and freedom, an absolutely safe car could then possibly result in turning our roads in one big slaughter-house.

Freedom, however, can be interchanged with other phenomena, too. For example, the German automobile drivers make almost one quarter of all rides for a distance shorter than mere two kilometers. Roughly half of all personal rides in Germany then comes to distances shorter than five kilometers. In this context, the expression that fits best the way how drivers understand their freedom is "comfort". However, if we replace freedom by vanity, ruthlessness and comfort, freedom can, in the first place, take form of a traffic jam. Freedom of automobile drivers or rather its semblance then burns itself out.

The automobile gives its driver a magnificent feeling of freedom and independence. This feeling is granted to a driver in a situation when he is isolated from the surrounding world by a ton of sheet metal, plastic and glass. He sits behind the steering wheel in the embryo-like position, tied and fixed by a safety belt. At the same time, however, as the automobile promptly reacts at his slightest impulse, he has the impression that the developed speed and power depend only on him, and that they are the result of his own will. This constellation strongly reminds of the situation diagnosed by psychologists as secondary narcissism which is considered by them as one possible strategy for an escape from reality. No wonder that an automobile commercial symptomatically assures drivers that if they buy a car of that brand, they would feel in it as safe as a baby in mum's pram. The driver's arms, legs, and eyes are fixed during the ride and he is concentrated on the only thing: narcissistic identification of his own body with the powerful body of the engine, with its dynamic and speed.

It is the very motive of an escape that repeatedly arises in connection with the phenomenon of automobile transportation. It seems as if Henry Ford's

slogan "We will solve problems of cities by simply leaving them" was still in force. The mass growth of automobile traffic not only requires this strategy but moreover, it has strongly generalized it. Under the conditions of organized modernity, the automobile is reminiscent of something like "the earth of nobody" in which one can move between the zones of necessity determined by one's job, family, and the societal convention. The ever-growing speed of transfers between these necessities inside of the comfortable environment of an automobile is perceived as fulfillment of freedom. The automobile enables an everyday escape from a boring black-and-white job to a boring color TV-set and back. Over the weekends, it enables an escape from denaturalized cities to overcrowded recreation areas and back. This act of kindness can itself outweigh all sacrifices related to the road traffic in the eyes of automobilists. However, the automobile can do even more. It makes possible not only an escape within the physical space but also the social space. In the role of a driver, one does not respect any other superior authority aside from impersonal rules of the Traffic Code. For everyone who has above him or her a lot of definite authorities in the real life, the role of a driver must present the highest satisfaction. It enables these people to cheat on the real hierarchy for at least a few kilometers. No matter if an automobile runs across the flat plain, it functions as an elevator carrying his owner up to the top stories of the hierarchy. Up to the point, where one directs. The faster he or she runs, the more high-minded one feels.

It is not incidental that the very motive of an escape from reality, from its problems and its desperate commonness, has sufficiently supplied perhaps all commercials during this century by means of which the car makers try to cultivate the fixation of the public to their products. For all this time, the strategy of commercial makers has not changed much, and in spite of significant improvements in the technique of side effects, the basic appeal of their spots still remains the same. From the beginning of this century, prospective buyers of automobiles are convinced that, "Our new model of the automobile will carry you far away from everyday life, far from overcrowded cities with traffic jams. It will take you far from all automobiles. Only there you will be able to encounter a lovely and exciting experience. You yourselves will become there almost as perfect as our latest, fastest, most comfortable and, moreover, financially reasonable model - at least for those more successful of you."

Turning Green: The Making of a Minimalist

by Erazim Kohák

This concluding confession really is a post script, not an integral part of the book, and I would encourage the reader to omit it. It is rather personal, an *apologia pro vita sua*. It made a sense of sorts in the original Czech edition. Ours is an intimately small country, we tend to know each other personally and so to be curious about each other rather like neighbors in a village. It makes little sense in a world language. Here it is ideas, not persons, that matter. Treat it, if you will, as one person's confession, no more.

When I lectured on these matters at the Philosophical Faculty of Charles University in Prague and at Boston University before that, I always refused to answer the inevitable question, "What do you think about it?" I saw my task as a teacher as one of presenting my students with problems and ideas, not with an autobiography. It is ideas, not personal views, that ought to matter in the classroom. My concern in surveying the range of ecological alternatives was not and is not that obsession of all ideologies, East and West, with *which is right*. My interest is in what we can derive from each of them, independently of personal agreement or disagreement. That, I think, ought to be the concern of the classroom. With this book, though, my lectures entered the public domain – and the question about my own views is being answered for me, often in strange and wonderful ways. So perhaps a few personal words are in order, in self-defense, lest I be charged with ideas I have sought to present rather than advocate.

By hint and indirection, I have borne my witness. I love this Earth with an active love in the spirit of apostle James,¹ I rejoice in all that is and lives with a Schweitzer-like joy, I dread wanton destruction and vain perishing. For me, ecological philosophy is not an ideology but an effective response to the

threat and destruction of life on this Earth. That is why for me practical "flannel" ecology is the very heart of the matter and Leopold and Rolston my favorite writers, though I have learned from the entire spectrum of ecological thought. Flannel ecology is the reality testing that keeps subjectivising approaches from narcissism, objectivizing ones from turning into abstractions and all of it from sliding into ideology. The purpose of ecological thought is not theory but practice, forging ways of human dwelling on this Earth that would respect both its integrity and the integrity of humankind. In the words of the Greenpeace slogan, I want to *tread lightly upon the Earth*.

In the long range, to be sure, I am rather persuaded by the Old Testament prophets that injustice is at the root of the problem. It is the ability of the superconsuming countries and social strata to exploit without thought or hindrance the vast majority of humankind that makes profligate overconsumption, the major source of ecological danger, possible in the first place. It is the desperate impoverishment, spiritual and material alike, of the rest of the world that is the driving force behind the second ecological danger, overpopulation. Global equitable distribution may well be the long-range key to lowering overconsumption and overpopulation alike.

That, though, is in the theoretical long range. The pressing, short range need seems to me the raising of *ecological literacy* – enabling humankind, especially its profligate overconsuming segment, to become aware of the implications of its choices and its acts. Metaphorically – and literally – the fact that in spite of global warming most humans still consider automobiles something desirable pinpoints the problem: we literally *do not know what we are doing*. A revolt of the impoverished might contribute to more equitable distribution, but only if it is matched by far greater social and ecological awareness on the part of the overprivileged. Technologization of overprivileged lives contributes heavily to the ecological insensitivity which makes heedless exploitation possible. The tripple need may well be for ecological equity, ecological literacy and ecological sensitivity.

My own earliest ecological experience was actually a second hand one. It was a scene at the start of a book of a great Czech narrator and sensitive human being, František Kozík, named *The Victors' Flag*. The boy protagonist Toník is learning to do magic: paper turtles that move. He is trying to glue a paper turtle onto a fly's wings. Malina, a gymnastic coach, interrupts him. Toník feels ashamed and I, the small reader, felt ashamed as well. I realised

¹ "What doth it profit, my brethren, though a man say he hath faith, and have not works? can faith save him? if a brother or sister be naked, and destitute of daily food, and one of you say unto them, Depart in peace, be ye warmed and filled; notwithstanding ye give them not those things which are needful to the body; what doth it profit? Even so faith, if it hath not works, is dead, being alone" (James 2:14–17) – I do not think this passage "against Protestants" or at odds with Paul's and Martin Luther's stress on God's grace received through faith, but a crystal clear grasp of the intertwining of love and labor.

I was perfectly capable of doing it, too, without even thinking. Thanks to František Kozík I became aware of the horror of indifference to the humble lives that surround us.

Then one more second-hand experience. My father, who took part in the anti-Nazi resistance from the first day of the German occupation of Czechoslovakia, was a prisoner of the Gestapo from 1941 on. Once he recounted to me the days he spent on the wooden benches in the basement of the Petschek Palace where the Gestapo brought its prisoners each day for interrogation, waiting in deadly anxiety to be called. He would sit thus with his fellow prisoners perhaps the entire day. He was permitted to look neither left nor right, only straight ahead at the whitewashed wall.² Once he recounted to me the gratitude he felt when a fly landed on the wall and began to clean its wings with its hind legs. It was a touch of life. Till his death in 1996 my father never killed flies. He would catch them under a glass and take them outside. Perhaps with a word of thanks. I do it after him to this day.

There are many more fragments that make up a life, like a short story I read a lifetime later which made me intensely aware of the plight of laboratory animals about which I had read so much theoretically.³ Perhaps one more recollection is in order, in self-defense – the years I spent living in a New Hampshire clearing, beyond the paved road and the powerline. Among my Czech countrymen, legend has painted it as a log cabin straight out of Sergeant Preston and *The Challenge of the Yukon*. Actually, it was nothing of the sort. It was one of those homesteads that sprouted all over America as the survivors of the urban shipwreck of the Viet Nam years took to the woods, armed with a tape of Woodie Guthrie and a copy of *Little House on the Prairie* in place of the family Bible. It was one room with a half loft, eighteen by twenty four feet, built largely by self-help and with maximal

² The Gestapo used the Judicial Palace in Pankrác as its prison, taking the prisoners scheduled for interrogation in a police wagon in the morning to its headquarters at the Petschek Palace at the corner of what today is Washington Street and Political Prisoners Street in Prague 1, across from the main railway station. The basement room, known as "the cinema", where prisoners awaited interrogation, is open to the public as a memorial. When next in Prague, visit it, sit on the bench, stare at the wall.

³ "The Last Rat" by Sherree Dukes Conrad recounts, with consummate art, the defiance and defeat of a laboratory rat who knew his fate. I read it in manuscript in 1986 but have never been able to track it down in print. I hope this book will be a testimony that his fate did not disappear in the flow of time but, as Whitehead would have it, is inscribed in the consequent nature of God.

economy.⁴ There was neither a paved road nor electricity, but it was hardly wilderness. The house was clean, perhaps not as in *Better Homes and Gardens*, but clean as a farmhouse a century ago. I was not out to prove that it is possible to live primitively. The rural poor the world over prove that far better than I possibly could. My concern was the opposite – to show that cultivated life need not be economically or ecologically costly to this Earth.⁵

The house was built so that it could be heated by one woodstove and insulated it thoroughly so that it would not take that much wood. The very first installation in the house, then not yet finished, was a toilet free of dirt and odor. It was a recirculating toilet hooked to an automobile battery, inexpensive and economical. Cold water flowed into the tub by gravity, warm was heated in a coil of copper tubing in the chimney. For light there were oil lamps with an inch wick. Later, as my eyes grew weaker, I supplemented them with LP gas lights. That replaced the two-burner white gas stove on which I cooked in the summer. A cool cellar worked well as a refrigerator – scalded milk lasted four days. Most of all, I remained within my very tight budget, yet I lacked nothing to live well. The greatest gift was the virgin darkness of the valley, the pensive silence of the woods and the racoons, woodchucks, chipmunks, beavers and occasional deer. It was immensely restorative and I shall ever be grateful for it.

On that remote clearing where the dusk spreads from beneath the hemlocks and the night is full of stars I started to think about nature. The book that was born of that experience, *The Embers and the Stars*, is in some ways kin to the writings of the depth ecologists. It is an intensely personal book whose main contribution is transforming the reader's sense of nature.

⁴ I wrote about it in Czech in the article "The Meaning of Home" in *Domov* 38.3 (Mar 98):74-77. The pictures I have are of a later date, by which time I had added three rooms and there were six of us sharing the home – Amanda and Frank with little Alexander, my adoptive brother, Stephen Capizzano, my wife Dorothy and I and our dog Andy. A single woodstove kept us warm all winter. Life really need not be ecologically destructive to be good.

⁵ Perhaps that is why I was not enthusiastic about Helen Norberg-Hodge's book which appeared in Czech as *Dávny budoucnosti*, *Ancient Futures*. Already the title presents desperate poverty as a model and shows how beautiful it is. It is not beautiful. I know poverty from the third world: the poor can often be beautiful, poverty itself is ugly and evil. I think it absolutely crucial that ecological activists seek a long-range sustainable mode of life free of poverty, not returns to it, in the present, not in long ago memories, like the protagonist of Světlá's excellent 1984 film, *What's with you, Doctor?* In place of Norberg-Hodge I would recommend Bill McKibben's *Hope, Human and Wild: True Stories of Living Lightly on the Earth*, and Hana Lbrová, *Pestří a zelení* (*The Colourful and the Green*).

The alienation from living nature is something all too real. It dulls in humans both their ability to feel and their will to protect. An intimate encounter with nature opens a person to it, teaches empathy and so provides motivation for ecological activism. I do not think, however, that we would solve the ecological crisis if we reverted to oil lamps and wood stoves. For that, far more clear and rigorous thought is needed. Perhaps that is why I never agreed to a Czech translation. It was a book about personal renewal. A different kind of a book is needed now, about personal responsibility.

Cataloging my ecological views would quickly become boring. I do not feel comfortable in any of the pigeonholes I have been describing, having richly drawn on all of them. When a philosophy proclaims itself as the One True Faith that will save humankind, it becomes irrelevant. On the other hand, when philosophical thought seeks to define a problem clearly and casts about for solutions, it can learn from a whole range of perspectives. I cherish Schweitzer and Leopold, Ralston and Callicut, but, for all my distrust of irrationalism, I also appreciate John Seed's empathy with living nature and even Garrett Hardin's sense of hard choices and the Stoic-like starkness of his views. I have little interest in taking sides, only in taking ideas that can be put to use in coping with the problem at hand. Seeing that clearly seems to me the crucial task.

Thanks to thinkers like E. O. Wilson, Donella Meadows and yes, even James Lovelock that problem is emerging rather clearly. This Earth – or perhaps Nature, in the sense of the complex of all life and all that sustains it – cannot long survive the demands we are making upon it. There are too many of us, we demand too much – and we are powerful enough to wrest it from the Earth, heedless of cost. As E. O. Wilson and others point out, a correction must come, a radical lowering of both our numbers and of our level of consumption in the overconsuming world so that the impoverished world can rise out of misery. The only question is whether we shall continue to increase our numbers and our demands until we trigger a catastrophe – drastic impoverishment and massive die-out – or whether we shall be wise enough and mature enough to accept responsibility for forging a sustainable mode of living before a catastrophe cancels all demands.

In the affluent world, it is much in the vogue to assume that the root of the ecological crisis lies in the population explosion, presumably largely in the Third world. That shifts the responsibility for resolving the crisis onto the Third world. Let them introduce family planning. Just the sheer weight of numbers is staggering and numbers, however impoverished, require space.

Throughout the Third world, forest expanses are shrinking and species are dying out, crowded by the desperately poor struggling for space.

That, though, is only a small part of the truth, and by itself deceptive. The United Nations *Human Development Report 1998* points out that while the impoverished world accounts for some three quarters of the world's people, it accounts for only twenty percent of the world's consumption and waste production. The exact figures cited in various reports differ marginally, but the lesson is clear: while it is urgent to deal with the population explosion on humanitarian as well as ecological grounds, even if the entire Third world were to disappear, it would affect the ecological crisis only marginally. Eighty percent of the problem is the insatiable gargantuan demand of the overconsuming world. What we are wont to call affluence is in fact a paroxysm of greed. The real ecoterrorists today are the innocently greedy denizens of that world, living their consumer caricature of the American Dream, who think it is their right to consume many times their share of what the Earth produces and deposit on it many times their share of waste.

The assurance offered by some objectivistic approaches, that Nature will bring about a correction, is to me rather less than reassuring. Catastrophic corrections tend to be rather unselective. There are human achievements which I believe worth preserving. Among those I would count a healthy environment, personal safety, availability of medical care, access to basic education but also such minima, denied to most humans, as clean water and safe waste disposal. Are we, the overconsuming ecoterrorists, willing to change our ways so that we could preserve what is truly significant and extend it to all humans? It need not mean choosing poverty. Just curtailing airtravel in favor of trains, opting for more economic concentrated housing instead of suburban sprawl, substituting public transport for second and third car and using free time in less costly ways than globetrotting would represent a hefty saving. That is not a return to the cave. It is simply a matter of willing modesty and justice in place of greed.

How can we go about it? Two distinct strategies present themselves. **One would resolve the crisis of demands and possibilities with more effective technology, the other with less demanding humanity.** As long as we demand more than we can satisfy sustainably by present means – and that is the real nature of the ecological crisis – we can must either desire less or produce more. Which will it be, more frugal humanity or more profligate technology?

The earliest reaction to the awakening ecological consciousness, represented in America by Rachel Carson's *The Silent Spring* and the Meadows' *The Limits to Growth*, was ambivalent. Then the oil crisis of the seventies seemed to awaken old New England virtues of modesty and hard work, the morality of Puritan settlers. Wholly in the spirit of President Carter, America turned toward frugality. In four years it took a series of decisive steps both in ecological legislation and in ecological attitudes. Perhaps most symptomatically, Americans, though too entrapped in their suburban sprawl to turn to public transport, at least started demanding smaller, more economic cars.

Car manufacturers and oil companies mounted a powerful counterattack. Commercially ridiculed economic cars as "econoboxes". Presidential candidate Reagan proclaimed that frugality is un-American, that the American way is to produce more and consume more. The election in 1979, opposing ecologically oriented Carter to Ronald Reagan, the ultimate apostle of growth, was in a way a plebiscite about frugality. Ronald Reagan won by a narrow margin – and America turned to more escalating affluence at home by expanding its sway over the globe. The idea of more efficient technology, labeled sustainable development, provided a salve for sore conscience.

In Europe, the strategy of more demanding technology has its proponents no longer so much among the Thatcherites as in the authors of the new report to the Club of Rome, *Factor Four*.⁶ The subtitle captures the basic promise – *Doubling the Wealth*. It is not surprising that the book affected many European readers the same way as Reagan's slogan that frugality is un-American, that the American way is to produce more and consume more. Increasing consumption is a slogan which, in the twentieth century, has become almost a synonym for increasing happiness. Though nothing bears it out, Europeans believe it as fervently as the Americans and are willing to sacrifice the deprived countries no less than nature to the pursuit of affluence. The irony may well be that social injustice might prove the ultimate cause of the ecological disaster. It is the reduction of much of the world to poverty that sustains the arrogant affluence of Europe and North America. Yet it is that affluence that is destroying the ecology of the Earth and so its own presuppositions. Neoliberalism provided a salve for any twinge of conscience

⁶ Ernst Ulrich von Weizsäcker et al., *Factor Four*, cited earlier for its technical usefulness and its ethical futility.

with respect to exploitation of the Third world. *Factor Four* seems to offer a corresponding ecological salve: a guarantee that the pursuit of affluence can continue with a clear conscience, at least as far as ecology is concerned, under the label of sustainable development.

For all that, the book has much to offer that is clearly positive. In contrast with the post-marxist rhapsodies about (sustainable) development and beneficial conquest of nature, *Factor Four* offers a wealth of concrete information both about the wastefulness of the present procedures and about the possibility of more economic ones. *Factor Four* propagates railways, restoration rather than replacement of old buildings, local rather than global production and consumption together with economic stimuli to encourage it. It will supposedly be possible to reach sustainability *without consumers having to reflect about their lifestyle* – or, in the terminology of system ecologists, without resorting to subjective approaches. We are promised twice the consumption and a clear conscience to boot.

Perhaps the most positive aspect of *Factor Four* is something that the authors mask by the bombastic title about double the wealth and by equally bombastic style which avoids even a hint of social criticism. Still, the authors cannot escape the human dimension of their analyses. They get to it at the very end of the book, on the last twelve of 320 pages in the Czech edition. Here they speak of non-material affluence, complain that selfishness is in the ascendancy and conclude that until our civilization overcomes the mechanism which suppresses non-material gratification with material development, it cannot prevail in the contest between the growth of effectiveness and the uninterrupted growth spiral.⁷

The conclusion of *Factor Four* proves to me that the strategy of more efficient technology is not viable. The first problem is the very idea of unlimited growth on a demonstrably limited Earth. I do not in the least doubt that we need the most efficient and most economical technology but as long as we use it solely to satisfy rising demands we solve nothing, only increase the problem. The race between new motorways and new automobiles in Los Angeles is a classic example. Every new freeway brings more cars into the city. Building freeways solved nothing, only increased saturation by automobiles. Only at the end of the nineties is Los Angeles beginning to

⁷ In the Czech edition, it is page 313. In other editions, look for Chapter 14, "Non-material Affluence" where you will find the passages dealing with will to sustainability appended as a wistful afterthought. You will look in vain for any mention of the pioneer of appropriate technology, E. F. Schumacher.

consider public transport which it let disintegrate half a century earlier. To me reading *Factor Four* emphasises the need to admit out loud what the authors admit covertly at the end of the book, *that the ultimate solution of the ecological crisis lies not in more effective technology but in more frugal and more generous humankind in what is today the overconsuming world.*

That is why I think ecological philosophy and ethics the key to the whole ecological problem. It seems to me utterly fundamental to think through and live through the whole philosophical question about the place of humans in the cosmos and in nature. It may be that a dramatic revolt of the deprived will drastically reduce the affluence of the privileged and restore the balance between human demands and nature's needs. Hoping for a catastrophe, though, is ever a height of folly. Catastrophes bring about adjustments unselectively. If we want the change to be healing rather than destructive, it is important to be clear just what we are trying to accomplish with environmental protection and long-range sustainability so that we would not become entangled in a whirl of vague generalities and conflicts over labels and slogans. We need no less to take an active part in acting quite locally, in protecting this or that, both for the results we achieve and the different, unestranged relation to nature we build. We need to learn to empathise and share not only with the human, but also with the non-human world.

That, though, is not longer simply a question of ethics but a far more basic question of philosophy, of the meaning of being human upon this earth. What is it that really matters, and what can we do without? Is life really about ever expanding consumption? Or does life, not just individual lives, but the life of humankind, have a different purpose? What is the *rika* of humankind in the history of the Earth?

In the Czech lands a century ago, that is something we discussed with great fervor under the label of the "meaning of our history". Those discussions generated more heat than light, yet they concealed something fundamental. Our positivists pointed out that *meaning* is inevitably a subject-related category. "Objectively" speaking – that is, without reference to a subject – history can only be, though even that is problematic. It cannot "mean". For that reason Josef Pekař, the greatest of the Czech positivist historians, refused to look for some underlying *meaning of Czech history* and insisted on a positive description of our past in all its conflicted multiplicity.⁸

⁸ So Josef Pekař, "The Meaning of Czech History" in anonymously edited collection, Josef Pekař, *On the Meaning of Czech History* (Rotterdam: Stojanov-Accord Edition, 1977): 383–405

Among those who seek the meaning of history in relation to subject there are those who imagine the subject as a great personality that projects its temporality into historicity and with its authentic deed challenges all the inauthentic everydayness of the lives of our kin.⁹ It is basically an aristocratic conception. While the faceless crowd is said to fall into the petty accumulation that marks the meaningless everyday life, the authentic deed of the decisive individual tears aside grey everydayness and illuminates temporality with historical meaning. So the great Czech philosopher at mid-20th century, Jan Patočka, in his study *What are the Czechs?*, cited earlier, stresses the role of heroic individuals like Přemysl Otakar II who attempted to establish Czech hegemony in central Europe in the thirteenth century – Patočka speaks of *the will to empire*. For that reason, too, he considers the thirty years of political and philosophic effort of T. G. Masaryk, the philosopher and later founder of the modern Czechoslovak state, at building up the Czech nation insignificant petty work and sees Masaryk's significance in the heroic or authentic act of revolt against Austria and founding a state.¹⁰ History – and so being human at large – here becomes meaningful in relation to a heroic individual.

Against this aristocratic conception of history thinkers in the democratic tradition object that meaning derived from a putative heroic individual is individually subjective and contingent on preference. If the meaning of our humanness is not to be purely contingent, it has to relate to humanity as such, or, in Husserl's terms, to *transcendental subjectivity*, structural subjectivity as such, not this or that set of subjects. So Husserl sees the meaning of humanity in the uniquely human possibility of guiding life by conscious, well grounded decision – he would say, *out of reason* – rather than being led by instinct, habit or „tradition.“¹¹ Masaryk understood that life in responsibility as the growth of humans to full humanity. For that reason, he

⁹ The terminology of "authenticity" and of inauthentic everyday accumulation comes from Martin Heidegger's influential work, *Being and Time* §§ 74–76, where Heidegger presents his conception of historicity as born of "authentic" assumption of a person's heritage.

¹⁰ Patočka interprets Masaryk similarly in his Masaryk studies, for inst. "An Attempt at a Czech National Philosophy and its Failure" (in Czech) in Ivan Chvatik and Pavel Kouba, eds. *Jan Patočka: Tři studie o Masarykovi* (Praha, Edice Váhy, 1991): 21–52

¹¹ "Philosophy and the Crisis of European Humanity", so called "Vienna Lecture" in Edmund Husserl, *Crisis of European Sciences and Transcendental Phenomenology* (translated David Carr, Evanston, Northwest University Press, 1970): 269–300

thought the ongoing effort at the humanization of this land rather than heroic deeds the most significant moments of Czech history.¹²

I am convinced, with Husserl and Masaryk, that if we can speak of the meaning of our humanity at all, it is not in reference to heroic deeds and dramatic gestures but in the distinctive possibilities of our humankind. Today that is no longer just the growth of individual humans to full stature of their humanity but the possibility of "saving the Earth" – finding a way of being human that would not end in natural self-destruction. Numerous commentators stress that humanity was led into conflict with sustainability *naturally*, by its instinctive expansion of all exotics. Humanity, however, has also no less naturally the possibility of living not out of instinct and custom but out of conscious, reflected decision. It has the possibility of overcoming consciously the "natural" tendency to self-destruction by a willed quest for sustainability. "Ecology" – the conscious search for long-term sustainable modes of cohabitation of humankind and the Earth – is no longer the hobby of nature lovers. It is the task of humankind and the meaning of our being. That, though, would be the topic for another book, one dedicated to that "Think globally" in the Greenpeace slogan. Our task here is more modest – "act locally". Let us set about learning all that the system theories and overlook: let us learn to love this Earth and to treat it with gratitude and respect. The point is not whether humankind can "save Nature". That always sounded to me as sheer megalomania. Perhaps we should say that the question is whether we can save humanity from the consequences of its own shortsighted greed. Most fundamentally, though, it is not a matter of any saving. It is a matter of learning to live in harmony, so that our cohabitation with the whole of life would not burden the Earth beyond the limits of sustainability. Or more poetically, to tread lightly so that, in the words of Ex. 20,12, *thy days may be long upon the land*.

¹² This theme comes up again and again in Masaryk's work. Masaryk deals with it systematically in *The Ideals of Humanity* (tr. M. J. Kohn-Holock, George Allen and Unwin, London, 1938) or again in *The Meaning of Czech History* (tr. Petr Kussi, Chapel Hill, NC, U. of NC Press, 1974) in 1895. That is why Masaryk's followers, who shared his conviction – Rádl, Capek, Peroutka – did not see Masaryk's greatness in the heroic deed of founding a state but in his life-long effort to support the cultural growth of our nation in democratic work, not in the aristocratic deed.

At the Turn of Time (Nine Reflections on the Close of Ancient Eras and the Second Millennium)

by Lubor Kysučan

Prologue: Civilization in Crisis

Historically, whenever a civilization finds itself in crisis, it begins to look to the past for a model, an ideal state. In the western cultural tradition, the expression of this search is the biblical story of Paradise Lost, an antique myth of the golden age. In European cultural history, the role of such a "golden age" was played by Greco-Roman antiquity. This era is perceived as an esthetical and ethical model, as the numerous times it has been turned to in the period from the Carolinian Renaissance to German New-humanism testify. However, at the end of the 20th century, what is really fascinating about antiquity for humanity, who anticipates the arrival of the new millennia with fears and hopes, is not so much its virginal purity, illusory perfection, and sacred harmony, but rather the similarity of its doom with the situation of present-day humanity. It is natural that history does not repeat itself: only certain critical situations, where man and the whole of humanity find themselves at the crossroads, facing the duty of choice, a deliberate decision for one of several possible futures.

One such critical situation in human history was the period of decay of the West-Roman Empire, which ended European antiquity. Numerous symptoms of this decay at various levels of human existence make us agree with a saying by Horatio, a Roman poet: "*Mutato nomine de te fabula narratur*". (The fable speaks of you, only the name has changed.) There are so many analogies between the signs of ancient Rome's decadence and the present global crises that even journalists have adopted the cliché "the ancient Rome syndrome". Many wise heads in Europe, from Czech philosopher Erazim Kohák to the English social ecologist Edward Goldsmith, refer to these similarities with scientific proficiency.

The author of this essay would also like to contribute to this discussion, stressing the thus far omitted similarities in changes in mentality and perception of the world, areas in which both periods have much in common.

Reflection One: From the Civic Society towards the Authoritarian State

Perhaps the most inspirational contribution of Greek and Roman culture in the otherwise problematic European tradition, was the creation of a self-governing civic society. Despite the fact that various sections of the population were – to a greater or lesser extent – excluded from this society (foreigners, slaves, and to a great extent in Greece women), the Greek *polis* and Roman *res publica* represented in many respects the climax of the present day, and for long centuries following, because they enabled the free development of many more people than any other society in antiquity. No question it was the very existence of democracy which led towards the unique economic and political growth of Greece and Rome, and no question it was the loss of this democracy which caused the decay of both cultures.

Ancient democracy had its limits, which acted as a fatal flaw in its further development. Besides excluding numerous groups from the above-mentioned society, these included the absence of representative bodies (in the modern perception) and the lack of technical means of communication. Every democracy is first of all a dialogue, which requires feedback, a quick answer to a question, participation, cooperation and involvement of all those partaking in such a dialogue. Democracy of antiquity was a direct one, meaning that all requirements listed above could be fulfilled within a limited area of town states. However, as soon as these states grew to vast empires, the existing system became completely dysfunctional since that period did not have the conveniences of modern institutions and mass-communication media. The only way out was a centralized monarchy, directed by an autocratic ruler and a large bureaucratic machine. The empire of Alexander the Macedonian, as well as the Hellenic states and the Roman Empire, functioned on this principle. Free citizens became serfs of the ruler and clients of “maintenance providing” states.

Maladies of these giant empires included the social uprooting and marginalization of a great number of formerly free citizens. As a result of economic changes, the ever-growing number of free peasants lost their land and migrated to towns, which gave rise to an increasing stratum of urban poor. This proletariat was dependent on the care of the state, on the renowned allocations of bread and game. Such a social system presented a huge burden for the state and was one of the causes of the economic collapse of Rome. In this way, ancient Rome did not avoid the paradox of modern welfare states. In the name of sustaining social stability and harmony,

it spent more and more money on social expenditures, which resulted in the undermining of this stability. Another cost of temporary peace was the growing apathy of citizens, living day by day from one allowance to the next and from one form of entertainment to another. This apathy, which could have temporarily been perceived by the power-holders as an advantage, finally turned against them. At the time when all heads and hands were necessary for the defense of societal values, there was suddenly no one to care about these values at all. On the eve of its end, the Roman Empire offers a sad picture of a disintegrated society in which one stratum or section stands against the second – a society which lacks a single unifying idea or *raison d'être*.

Even though highly developed democracies of the present time have created unprecedented space for freedom, the domination of the anonymous and basically authoritative power of institutions, trans-national corporations, and interest groups, as well as the whole lifestyle of a technocratic civilization, pushes citizens into a situation similar to that which existed two thousand years ago in Rome. Practically, the only way out of the Roman crisis became the institutions of the Christian church which, during the period of dark ages, took over many of the social functions of a collapsing state. The question arises whether a varied spectrum of the third sector – humanitarian, ecological, and human rights NGOs – is going to compensate for an indifferent and detached-from-reality power elite in the administration of a society, in the same way as a vital and inspired church substituted for a falling Roman state.

Reflection Two: From the Economy of Need to the Economy of Surplus and Back

A great part of crisis phenomena in Roman society was closely tied to the development of the economy. In the early Roman republic, it was inefficient and based mostly on the exchange of natural products. Essentially, it was a rural economy, which relied on abundant and free peasants who constituted the healthy core of the civic society. With the inflow of affluence and a cheap labor force in the form of slaves, the society begins to diversify; rich landowners establish themselves at the expense of formerly self-sufficient small peasants by growing crops on a large scale and for sale. Economic growth speeds up the expansion of a market economy, which becomes more and more monetary. Business, finance, civil engineering and a diverse range

of services create numerous opportunities for beneficial entrepreneurial ventures. The most profitable seem to be banking, land and real estate speculation, and renting taxes from provinces. Similarly as in the present-day world, such an economic orientation led to the ruthless devastation of subjugated territories, and finally to financial instability.

The sparkling economic growth of a republic at its climax is then – after approximately two hundred years – replaced by an era of economic decline. Archeological findings confirm a desperate effort to find a way to face disintegration by harsh administrative and police measures (taxes, price control, strict penalties for economic crime, hereditary attachment of town-dwellers to their occupations and of lords to the land). Worthless currency dwellers to their occupations and of lords to the land). Worthless currency no longer reflects real economic relationships and society returns back to a natural economy. A free market economy changes into a barracks-like “feudal socialism”, only speeding up the collapse by its rigidity and restriction. Another disease of the Roman economy was “small-scale globalization”, resulting in the loss of self-sufficiency of various Mediterranean regions, particularly Italy. Rome with its million inhabitants, along with a large part of Italy became dependent on the import of grain from North Africa, mainly from Egypt.

The Roman economy could only grow while there was a constant supply of raw materials, goods and slaves. As these diminished, the economy also declined. The power elite lacked the will to seek alternatives, and as a result notable treasures of science and various technical inventions remained in libraries where they were soon plundered by raiders from other parts of the world. Technical inventions, which could have then triggered the industrial revolution and make harsh manual work easier, were only used for games and organizing costly entertainment. It seems that the present day world suffers from a similar disease: the fear of implementing technical and social alternatives, which have been worked out in theory long ago. In this way, the selfish interests of the power elite in First and Third world countries, along with the self-motion of a ever-decreasingly manageable technical civilization, prolong the survival of a system which stands – just as in the case of Rome – on the plundering of natural resources and undervalued human labor.

Reflection Three: “Flood After Us!” or *Modus Vivendi* without Perspective

The inflow of wealth to Rome obtained in unproductive ways caused the members of the rich elite to quickly adopt the costly lifestyle of consumerism.

A lot of Roman politicians strove to eliminate at least the most striking excesses. These efforts are reflected in the so-called *leges sumptuariae*, laws against luxury. For example, a Roman politician Marcus Porcius Cato the Elder (234–149 BC) posed a special luxury tax on expensive clothing, carriages, jewelry and even slaves. Even at the end of the republic, laws were passed which restrained import of expensive Oriental perfumes and Greek wines to Rome. Similarly, the first Roman emperors limited expenditures on feasts, expensive clothing and table-wear. Despite these attempts, consumerism spread to the broad masses of people and, in fact became the means of their corruption by the power elite.

The affluence of Rome was made possible by the exploitation of certain subjugated areas, like Egypt, just as many affluent western countries of the present time benefit from a dominant status of the North towards the South. The consumer lifestyle became widely criticized by stoic philosophers, historians, and satirists. Especially writers like C. Sallustius Crispus, Titus Livius, and Ammianus Marcellinus perceived in its expansion one of the causes for the social decay of Rome. Likewise, a Greek historian Polybius writes about the Romans, “*Wealth settled down in a community and life was overcome by profligacy. Men became ambitious in their fight for getting public offices. Dissatisfaction of those who felt rejected, pride, and hedonism began to cause failure.*” Roman society had literally been overeating up to its end. When it reached the bottom, conflict arose in society. It was, however, not conflict over ideals or societal concepts, but only over the access to material resources of consumerism. The society that found itself in such a state was no longer able to solve its internal problems or to face danger from outside. Symbolic in this respect is the case of the citizens of Trewir, cited by the late-Roman historian Salvianus, who were only interested in circus games while German raiders conquered their town. The Christian church stretched something like a protective net around this disrupted society. However, it was not able to retain the integral whole, but only maintain some civilized values from its heritage.

Analogously, the strength and superiority of western democracies in the present day world are closely tied to economic prosperity and a level of consumerism which is maintained with more and more difficulty. A lot of people in the industrial world identify a free society with a freedom to consume and human rights, mainly with the right to live a materially saturated lifestyle. One may ask what the future holds for a free world when (as a result of economic and ecological limits) humanity will be forced to accept

a substantially more modest lifestyle. Will humanity still be able – despite the changed conditions – to maintain the basic non-material values of an open society, or is our future going to turn to a harsh struggle for survival in which we will forget our humanity and throw away all the knowledge acquired during the development of civilization?

Reflection Four: The Broken Picture of the World and the Loss of Meaning

Inhabitants of classical Greek communities and the Roman republic lived their lives in a safe, settled world of traditional ethical, religious, political values and certainties. Religion and ethics of civic virtues created a solid framework, which provided them with an intimate feeling of home. The lives of the majority were tied to a rather small territory of town states, which created a community of people who mostly knew each other. Service to the community by means of a military or political career was considered to be the main fulfillment of a free citizen's life. In fulfillment of these commitments, a free citizen found the sense of his life and likewise, the community of antiquity found the sense of its existence in protection of his freedom and safety. He who refused to participate in the administration of public affairs was identified by a Greek word *idiotês* (in Latin *idiotâ* = private person).

With the transformation of basically self-sufficient civic communities into vast empires, the situation changed profoundly. Direct democracy was replaced by an impersonal, dehumanized state, depriving citizens of freedom and the ability of managing their own affairs. Traditional religion found itself in competition with many different ideas about the world and oneself, the ethics of a civic modesty gave way to a chase for profit and consumerism. People lost the feeling of home and security. When Seneca describes in his "Consolation for Mother Helvia" the inhabitants of Rome of his time, he says that most of them are "without a motherland" and that "though they came to a city which is huge and beautiful, it is not theirs". The feeling of displacement, relative values, and a profoundly changed picture of the world, create a situation where people lose orientation and meaning in their lives. An escape from this evident frustration is reflected in an increased need for dependency, whether on consumerism or on extreme, often fundamentalist, ideologies of variable tones. Should this mental state become spread to the masses, the life spirit, integrity and future of society as a whole is clearly endangered. A famous Austrian psychiatrist and psychologist,

Viktor Emmanuel Frankl, proves in his extensive studies that the loss of meaning belongs to one of the most painful maladies of a modern society, primarily of the saturated Euro-American civilization. It seems that attempts to do away with threatening social, ecological, and moral problems of the present world must begin with individual and collective psychotherapy, which will positively charge us and direct our lives from self-(and other) destructive practices towards awakening the senses and joy in one's inner world. Unless we achieve internal peace and harmony with ourselves, all purely technocratic solutions of global problems will come down to merciless social engineering which will bring us more harm than benefit.

Reflection Five: Questions about the Global Epoch

Globalization is one of the most frequently used words today, here uttered with an optimistic hope, there with a deep skepticism and almost apocalyptic visions. Although sociologists argue whether it began as early as the end of the last century or only in the middle of this century, deeper understanding of history clearly reveals that the process of globalization with all its attributes took place as early as in antiquity. Naturally, it was not globalization on a planetary dimension but "globalization on a small scale", within the antiquity territories of the Mediterranean and Near East. Indeed, even antique maps prove that these areas were considered by ancient Greeks and Romans to be their familiar world, or at least its "civilized middle".

The world united by Hellenistic culture, which flourished in successive stages in the empire of Alexander the Macedonian, and later in the Roman Empire, enabled extraordinary intermingling and overlapping of cultures, religions, and lifestyles. Also, it created a vast space for international trade and, up to that time unprecedented, mobility of citizens. Even though mutual cultural influence is symptomatic even in archaic periods of development of the civilizations of antiquity, it evidently culminated during this epoch. Europe meets Asia and educated people of that time find themselves cosmopolitans (a Greek word *kosmopolitês* literally means "world-citizen"). Seneca the Younger, previously mentioned, says, "It is necessary to live with the conviction that we were not born for one corner, but that this whole world is our motherland".

Besides the already mentioned shadows of ancient globalization (establishing economic dependence, rule of finance over economics, value relativism, feeling of displacement and loss of home), this process also has

positive attributes. The fact that people encountered diversities and differences helped them form their consciousness of human universality. A typical representative of a village in that era still maintained a perception of the world inherited from archaic ages of tribal society and looked at foreigners, diversity and difference with distrust. In contrast, the radical plurality of Hellenistic and Roman epochs gave birth to a tolerant cosmopolitanism and taught them, if not to directly be interested in other cultures, then at least to be tolerant towards them and to strive for a peaceful coexistence. This social and cultural climate gave rise to a stoic philosophy which not only considered the Earth one living being but also, for the first time in history, it presented the idea of equality of all people. Without a Hellenic cosmopolitanism, one could hardly imagine Christianity, one of the first really universal religions in history, overcoming social and ethnic barriers.

In spite of the above, the Mediterranean "global village" did not survive and eventually split apart in the vortex of ethnic, social, and religious conflicts. The stoic *filantropia* and *humanitas* gave way to brute force, greed, intolerance and became a dispensable luxury in the struggle for basic survival which arose when the established structures of the West-Roman Empire – as a result of its own weakness and the pressure of invasions from outside – began to fall. It is a fact that the cosmopolitanism of civilization reserved for a narrow elite, who benefited from the advantages of civilization progress, while the majority of the population in subjugated territories found it strange if not even unacceptable. The reason is that cosmopolitanism in their eyes embodied the presence of an all-powerful state restricting their freedom and life chances.

Likewise, today's world faces the same danger. While globalization gives hope and seems promising to many people, it is run according to the vision and in the interest of the rich Euro-Atlantic world, which tries to gain political and economic superiority, characterized by the supremacy of transnational corporations and a distribution of power accurately referred to by critical political scientists as *pax Americana*. Current globalization does not represent equal sharing and exchange at the cultural level either, but rather the export of a very decadent Americanized culture, unmercifully suppressing the spiritual traditions and ancient cultures of the whole planet. The dispute over globalization thus depicts one of the most critical dilemmas of today: We either give preference to a uniformed, "McDonaldized world" of consumerism and boredom, or we voluntarily decide to contribute to the real unification of the human species characterized by finding the basic

common values and true "unity in diversity" which even the thinkers of antiquity wrote about. To reach this state is one of the preconditions of how to overcome the global crisis of present day humanity.

Reflection Six: Thirst For the Spirit and Consolation from Faith

Current critiques of globalization mostly focus on its economic, ecological and social aspects; however, its mental and psychological dimension is just as problematic. When society, as a consequence of its own development (and especially as it encounters a different view of the world of our neighbors) enters the state of radical plurality, human souls are seized by feelings of uncertainty, threat and fear. From the viewpoint of practical cultural experience, post-modernity does not represent a novelty of the close of the twentieth century, but rather one of the fundamental existential experiences of man. As early as antiquity, historian of philosophy Diogenés Laertian attributes the thought that "*it is necessary to abstain from judgments about truth*" to the skeptical philosophy which explores the relativity of moral and cultural norms among nations.

The Greek-Roman society, while at the beginning tied to the traditional, ritualized Olympus religion (which from the historical point of view also originated as a result of mutual cultural influence and many foreign influences) was in the later periods of its development affected by a great many cults and religious beliefs, particularly of Eastern origin (Egyptian cults of Isis and Orisis, the Asian cult of the Goddess-mother of Earth Kybelé and her son Attidus, later Judaism, then Christianity, and Mithraism). The following characteristics were significant for the spiritual situation of that time:

- Religious syncretism (a series of teachings originating as a result of the overlapping of many influences – the cult of the Alexandrine God Sarapidus, Athenian Sabazius or Roman Jupiter Dolichenus, later an expansion of gnosticism and manichaeism;
- Enhanced sensitivity and a tendency for ecstasy in new cults, a delight in mysticism, esoteric teachings;
- The need for a direct religious experience, a remarkable interest in paranormal phenomena in the late period of antiquity;
- Extreme expressions of spiritual investigation – asceticism, fasts, seclusion, self-mutilation;
- Apocalyptic, and at the same time, messiah-like expectations.

These new tendencies in religion in late antiquity are very similar to the state of mind of the post-modern man of western society, who oscillates between blasé cynicism, an exalted and unbinding easiness a la "to be cool" on the one hand, and depressing uncertainty and concern about sects of the broadest variety on the other hand. Another striking analogy is also eclecticism and interest in exotic, especially Eastern, religions. This "new religion" is an expression of a societal crisis. The more ruined, economically and politically uncertain, and chaotic the outer real world is, the more pathetically the man of antiquity, as well as the man of today, turns inside and to the mysteries lying beyond the boundaries of this world.

Such search in one's inner life belies great hope – on the condition that the experiences we have gained we will use for the illumination of our everyday routines and for personal change, which is almost a requirement for any fundamental change in civilization. It is because such a search resonates a secret string of our transcendental desires and values. That string which can yield dangerous fruits in the form of blind fanaticism and fundamentalism, but which can at the same time awake in us creative inspiration, joy of life, cheerful altruism and sometimes even mystical consciousness. Work with this transcendental component of our spiritual being is the major challenge for the upcoming century. At the same time, it is a challenge that resounds to us from as far as the depths of antiquity in the slogan of an ancient Greek sage who said, "*Gnôthi seauton*" (Know yourself).

Reflection Seven: Barbarians – the Third World of Antiquity?

Among the crucial problems of globalization is not only the relationship among cultures with different ethnic, social, and religious identities, but the greater problem among regions, countries, and civilizations which find themselves at different levels of development. The present division into first and third (fourth) world countries replaced the former block division (based on ideology) in the East and West. In antiquity, the analogy to the present state was the conflict between Rome and the "Barbarians". The gulf that separated Rome from the Barbarians was very similar to that which divides the North and the South of the planet. It was by no means a conflict of civilization in the sense of Samuel Huntington's theory. After all, Romans incorporated in their multinational and multicultural empire an entire group of fundamentally different and distant cultures and managed to

achieve appropriate *modus vivendi* with them. The conflict had social, political, and economic reasons:

- 1) demographic disparity – the stagnating, aging, and "tired" population of ancient Rome in contrast to the growing population of the Germanic and Sarmat tribes, which were prodded into movement under the pressure of other migrating nations;
- 2) economic disparity – on the part of Rome a strong, growing, and dynamic monetary economy, on the part of the Barbarians a cyclical, inefficient natural economy;
- 3) differences in lifestyles – resulting from imbalance of economies: on the part of Rome a wasteful lifestyle of over-consumption by the elite and masses, on the part of the Barbarians – a state of constant need and absolute dependency on the outer world;
- 4) a mental gap – a highly structured civilization founded on rationality, formal education, techniques, and science on one hand, a tribal society anchored in the myths and traditions of their ancestors on the other hand;
- 5) political distrust – all of the differences mentioned above evoked feelings of mutual distrust and threat on both sides, and led to constant tension frequently erupting into open wars which finally sealed Rome's fate.

Despite the above differences, one cannot imagine the relationship between the Barbarians and Romans as constant war or, on the contrary, as imperious isolation. The Roman border, *limes Romanus*, did not represent an insuperable iron curtain, but in contrast, it was a place of lively contact. The relationship between the Romans and the Barbarians was ambivalent, similar to the present coexistence of the North and the South. Rome unmercifully exploited the Barbarians and derived a great wealth from their natural resources as – after all – every stronger civilization does. The Barbarians were in fact perpetually more anxious about Roman affluence – which Romans used for corruption of the ruling elite of Barbarians. Numerous luxurious imports from the Mediterranean were also found in this territory, which provides evidence that particularly the upper strata cared about luxury import goods just like the current elite in the Third world does.

The fact that Rome did not hold out in the clash with the Barbarian world was its fault. It is because the Romans did not manage to establish a *modus* of equal coexistence, respecting the dignity of those who were at one time weaker. Right before the eyes of the poor they displayed the inordinate luxury and, at the same time, the moral decadence of their civilization. One of the expressions of this decadence was the contemptuous treatment of

Barbarians, who were frequently not even considered to be people. Roman politicians manipulatively intervened in relationships between individual tribes in the spirit of the well-known principle *Divide et impera*, which has been frequently applied in the Third world during the period of the Cold war. Appointing kings who reigned with the blessing of Rome is documented in numerous historiographic and numismatic sources. Thanks to the exploitation of Barbarian *gastarbeters* as a cheap labor and military force, as well as the impudent exploitation of Barbarians settled directly at the frontier of the empire, Rome had merit in nurturing a strong enemy. With regards to their learning ability, the Barbarians adopted the majority of Roman civilization's strong points and shrewdly saw through its weaknesses.

As the presently rich world of the North is repeating, in its relationship with the South, similar mistakes, seeing it only as a storehouse of cheap labor, cheap natural resources and fresh fruits for the Sunday table without the slightest good-will to understand the differences in civilization and share the wealth (acquired to its detriment anyway) – nothing good is waiting for the Earth. The doom of ancient Rome provides a warning that the most solid boundary is unable to defend rich civilizations against the migration of the poor and hungry, determined to take any action, unless it finds the courage for mutual sharing and to search for new ways of coexistence.

Reflection Eight: Metamorphosis of Muses

An evident symptom of the doom of civilization is a state when people uphold tedious forms of entertainment as the very sense of life and when this entertaining function also completely absorbs artistic creativity. Likewise, Greeko-Roman culture went through a similar process. While in the periods of its zenith, works of art were an expression and a connecting link of national identity, religious ceremony, and a celebration of individual creativity, arts during the period of decline became pure and simple entertainment for the masses – one of the drugs prescribed by the state in order to calm and control them. Additionally, arts and crafts were influenced by eclecticism, exhaustion of creativity, and turned to the past along with vulgarization of the form.

It was very much the same with sports. Mass spectacles like the chariot race replaced the heroic atmosphere of the Greek Olympic games and other sports, which were not races among competitors that took pride in their performance, but races of well-paid professionals. Many a time, blood

combats among the fans of individual crews represented a sort of substitution for suppressed free politics – in the Byzantine empire, under the reign of the emperor Justinian, they even ignited a small civil war in Constantinople.

Last but not least, Roman civilization gave birth to one of the most cruel and disgusting forms of mass entertainment – gladiator games and combat between animals. Mass import of animals from North Africa resulted in the extermination of numerous species. Romans also transposed the cruelty of these contests to drama performances that contained scenes of killing, death or executions performed "live" by sentenced convicts. Naturally, besides this mass culture, there also existed prominent salon culture of the intellectual elite imbued with philosophical spirit and sense for fine form. Unfortunately, a deep abyss separated these two worlds.

The present culture at the close of the twentieth century finds itself in a similar situation – commonly shared feelings, work, and feelings do not exist. Mass culture, represented by television, computers, videos, action movies, and sports more and more moves away from real art and sports deserving this name. This will then evidently result in fatal consequences for the coherence of our society, since the number of things we are willing to agree upon is constantly getting smaller... Moreover, mass culture produces an artificial world that effectively separates its consumers from the real, every-day problems we have to deal with.

Reflection Nine: Escapes

The culture of antiquity (primarily Roman), as any complex civilization, created an artificial world which disengaged itself from the primary dependence of tribal societies on the natural world. It established strong social institutions and efficient economics, which produced well being for a relatively high number of people and ensured feelings of safety and protection. However, the dark side of such a seemingly functional artificial world is a harsh feeling of lack of freedom, boredom, bondage and alienation, and moral and social decadence. Precisely these feelings generate the need for escape that is common for members of the majority of developed civilizations on the Earth. The escapes of the Romans were much like those of the present day, were directed towards:

1) **Outdoors** – the upper strata tired by social life and rush of overcrowded cities took refuge in rural summerhouses and residences where they indulged themselves in study and relaxation. Their lifestyle looked much the same as

that of most town-dwellers in western countries who spend their leisure time in the mountains, at the seaside, at cottages, country houses and by wanderings of all kinds and of all price categories.

2) **Simplicity** – the upper strata overfed by a profligate way of life sought peace of mind in a simple lifestyle, close to nature and the countryside. However, these efforts were frequently just a simple game, a mannerism. Romans materialized their dreams of a simple, rural life in comfortable villas, surrounded by processions of slaves. This fashion finds its expression in the *Buccol poetry*, celebrating pleasures of simple life of shepherds who lived in a harmony with nature. The Buccol fashion became a significant cultural phenomenon of European tradition from the Middle Ages through to Romanticism. We can even find some of its reflections in certain contemporary ecological movements, seeking voluntary modesty and an environmentally friendly lifestyle.

3) **Past** – Roman intellectuals compensated for their bitter disenchantment with lack of freedom and social decay by a certain sort of return to the past, considered by them as an ideal age. *Mores maiorum*, morals of the ancestors, represented in their eyes an ideal towards which their contemporaries should return. Their picture of the past – thoroughly idealized – was entirely in harmony with mythological perceptions of a golden age, and, as it seems, also with a general need of the human psyche to seek consolation (caused by frustration with the present and fear of the future) in the past.

4) **Barbarians** – The Romans encountered the lost virtues of their ancestors also in that era – in neighboring Barbarian nations. Despite the already mentioned xenophobia and contempt, some Romans idealized the Barbarian lives and perceived them almost like an image of the golden age. In the later antiquity, this change towards Barbarians became significantly more defined – according to the testimony of the aforementioned historian Salvianus, some Roman citizens voluntarily withdrew from tax and political oppression of the empire and moved to Barbarian tribes in search of life values denied them in their own civilization. The old Romans searched in Barbarian nations for the same things as Western people, tired by European civilization, search for in natural nations in the present.

Epilogue: Change in the Game

Despite all unfortunate analogies with the catastrophes and losses of the past as well as doubts for our strained epoch, we definitely do not live in

a time of hopelessness. For the study of historical resources accompanied by observation of the present time makes us understand that human nature, determining the course of history and the countenance of this world, though in essence seemingly invariable, is yet open to change and development. I believe this fact can best be characterized as “a change in the game”. It happens around and inside us every day. A pub-crawler turns into a mountaineer, a drug-addict into a writer, a reckless careerist into an affectionate, open man, and a neglected child living hand-to-mouth in a third-world slum into an honored expert in international law. These are all transformations into a higher quality of open consciousness, which is reflected in increased altruism, and knowledge in the sense of wisdom rather than bare academia.

Our calculations and scientific culture is unable to explain this; psychology faces such transformations open mouthed, and theology only manages to vaguely utter “a miracle”. Maybe, such forms of metamorphosis of human fates are really close to what Christianity calls “rebirth” and Buddhism “enlightenment”. In such situations, we touch something mystical, thus manifesting our desire for the supernatural that is encoded in us just like the bodily instincts. The fact that we are not quite able to name it, may mean we are also ashamed to talk about it, as about all matters of the soul. However, that “something” really exists and we have to take it seriously. Striving for a personal transformation then, seems to be the only possible way in order to accomplish a transformation in civilization on a large scale.

A chance to accomplish inner transformations is the last historical parallel we refer to in this essay. It is a parallel, throwing some hope and light on history, which sometimes appears as a comical tragedy *theatrum mundi*, an absurd gyration without any aim or sense. A parallel which reminds us that we are standing only at the beginning of evolution, that we do not live at the time of the Last Judgment, but in a testing period of our own free will and our choice between “to live a well-off lifestyle” or “to live well”. The word crisis – Greek *krisis* – which is so frequently used to describe the present time (most likely under the influence of economic crisis) and to which is attributed such a negative meaning, does not actually mean anything other than a turn, turbulence in development, the greatest moment, and the opportunity of choice. Thus, crisis is not a catastrophe but a turning point, the result of which only depends on us.

The Disparate Roots of Voluntary Modesty

by Hana Librová

Summary

The effective solution of environmental problems calls for changes in levels of consumption. Sociologists have described both moderation in households of high socio-economic status in affluent countries, and a type of modesty which cannot be a response to the experience of abundance. However, its essence is not the way of life of a traditional community. Sustainable living based on self-restraint could be considered to be a symptom of the summit of cultural evolution to date. Nevertheless, historical experience warns us against making too much of contemporary cases of moderation.

KEYWORDS: voluntary modesty, international sociological comparison

Appeals to Our Better Nature Versus Social Reality

Besides introducing appropriate technologies and in addition to the necessary demographic changes, a consistent solution to environmental problems involves changes in everyday lifestyles and in consumption. In recognition of this a growing number of topics such as "Sustainable Living", "Sustainable Lifestyles", "Sustainable Consumption" and "Alternative Patterns of Consumption" have featured in environmentally-oriented discussions. Most writers say that sustainable consumption implies changes in consumption patterns, while the braver amongst them state directly that this must also, or in particular, be understood as a *reduction of consumption*¹ in affluent countries.

In following what has been written about this topic, we are struck, on the one hand by the large number of texts on the level of more or less abstract visions and projects, and on the other by the paucity of references to actual

changes in everyday life.² Sustainable consumption seems so far to have been limited to appeals to our better natures. This is not so surprising, since we reject the idea of totalitarian enforcement of lifestyle change. An effective and long-term change of lifestyle is probably conceivable only as the result of a change in human values; but we know that our values have been formed over millennia and reflect the complicated development of European culture, and thus it will hardly be possible for them to change in a short time, however necessary that might be for the environment.

We should bear in mind Inglehart's longitudinal research in "The Silent Revolution" (1977) and "The Culture Shift" (1990), though not primarily inspired by environmental issues. It gave evidence of a growing number of people in industrially developed countries, particularly the young, who advocate post-materialistic values. There are though at least three reasons for preserving a certain caution. First: The occurrence of small-scale research that might in our eyes cast doubt on the optimism of Inglehart's findings.³ Second: Inglehart's research, based on questioning, did not discover how people in fact behave. He merely declared what are the verbally expressed attitudes of the people questioned. It is evident that when investigating social facts such as value orientation, the questioning method is connected with an extra high danger of self-styling aimed at conforming to the existing social norm. At the same time Inglehart's research confirms that at least a social norm preferring non-material values does exist.

Inglehart's interpretation also contains a third aspect that deprives the environmentally-aware readers of the joy of reading: It is the relationship between post-materialistic attitudes and the gross national product of a given country and its level of consumption. The interpretations that stress the material prosperity of the industrial stage as a precondition for post-materialistic values precludes the application of the concept of human value

² In popular periodicals, we sometimes can find articles on people who try to reduce their consumption. Journalists often write about them ironically and deal with their eccentricity. If those reports are written by a journalist who sympathizes with environmental endeavour, they are written, on the contrary, with a certain naive enthusiasm. A sociologist has to be careful here and has to subject such findings to the methodological scepticism of empirical research.

³ For example in their repeated research of university student attitudes, Myers and Diener (1995) declare that in 1993 75% of entering collegians agree that it is "very important" or "essential" that they be "very well-off financially". In 1970, only 39% of entering collegians felt that way. At the same time, the number who felt it "very important" or "essential" to "develop a meaningful philosophy of life" plummeted from 76% to 43%.

¹ In this context various terms are used. Authors of this study refers to use for example "voluntary simplicity" (Elgin), "moderation" (Aarts), "voluntary modesty" (Librová), "Reduction of consumption is implicit in Naess' category of "life quality" - dwelling in a situation with intrinsic value (Naess 1994).

change to those societies that had not experienced the consumption peak of today's most affluent societies.

In my part of Central Europe, Inglehart's interpretation is particularly provoking. Were we to accept this, it would provide a negative answer to a frequent Czech question and to discussions about the chance Czech Republic and other post-communist countries have to *jump over* the development stages of Western countries that showed themselves to be problematic.⁴

Three Pieces of Research into Sustainable Consumption

In this article I would like to compare three of the rare studies that inquired into voluntary moderation in consumption of households.

1. Research on voluntary simplicity carried out by Duane Elgin in the U.S. in 1977. His results were published in the book "Voluntary Simplicity".
2. A Netherlands case study by Wilma Aarts "Some Characteristics of Voluntary Moderation and Its Snob Appeal", published in 1993.
3. My own research carried out in the Czech Republic in 1992, the results of which formed a part of the book "The Colourful and the Green" subtitled "Some Chapters on Voluntary Modesty", published in 1994.

Since all three studies were carried out independently, they differ in the techniques used. This makes comparison difficult. The differences in the samples, about which I shall write later, can be considered as a "child of the method" rather than as differences in the countries where the studies took place.

I should briefly mention the methods used:
I should briefly mention the methods used:
ad 1. Elgin published a standardised questionnaire in the periodical "Evolution Quarterly" as a supplement to his article "Voluntary Simplicity". The respondents added some comprehensive self-reporting letters which became a source for further sociological information. The structure of the sample of 420 respondents was influenced by the fact that it was formed by the readers of one periodical and of one specific article. From now on I will call them *American Readers* for brevity's sake.

⁴ Not only some post-revolutionary intellectuals in these countries but also some foreign thinkers were looking to the possibilities of such jumps. In 1990 they wrote about the countries of Eastern and Central Europe as having a chance to change tracks in the development of modern European civilization (e.g. Dürr, 1990).

ad 2. Wilma Aarts gathered data in semi-structured interviews with the adult members of ten typical households regulating consumption in some way traced by "snowball sampling". They had at least a moderately high household income. Aart's research thus studied a group of rich Dutch people who did not spend all their income in everyday situations. They can be characterized by the label *Dutch Doctors*.

Aarts designed the research on the basis of the idea that "people can only decide to take less if they have more". With these presuppositions, along with Inglehart, Wilma Aarts setting up her sample ignores the possibility that people could live modestly without having to go through the stage of abundance.

ad 3. The existence of this possibility was supposed in my research in the Czech Republic. This also used snowball sampling⁵. In-depth interviews with 70 people were carried out and completed by direct observation. The interviews were audio- and video-recorded. For the most part, the respondents were precisely those who were satisfied with their present low salaries and who had given up the realistic possibility of better-paid jobs. I refer to my respondents as *Colourful Czechs* as they live modest but otherwise very varied lifestyles.

Similarities and Differences

It should be said from the outset that all three samples are internally heterogeneous, and that's why they are difficult to describe sociologically. Despite this, let's consider aspects of the *lifestyle of the Colourful Czechs which make them, more or less, similar to the sample of Aarts and that of Elgin*.⁶

- The shared basic characteristic is *low consumption* that is not imposed by external circumstances. This follows directly from the construction of the samples.
- A broad spectrum of ages was found in the samples, nevertheless young people were in a majority among the *Colourful Czechs* and *American Readers* (the average was roughly thirty) while the *Dutch Doctors* were older.

⁵ In the first step, the respondents were sought out by students of Sociology who had been introduced to the issue in the seminar. The advantage of this method was the fact that the students came from various social groups.

⁶ It is necessary to point out that there is often a lack of information for direct comparison. I often judge indirectly, from some logical context.

• All the samples are similar in the *relatively high education* of the respondents. (As we will see later on, the extent of its use varies.)

• The respondents of all the samples are able to resist the phenomenon that Konrad Lorenz called *neophilia*. They like objects that have been in use for a longer period of time such as furnishings, clothing and toys. In this point, they are immune to fashion influences. They do not object to *reusing things* from other households and are customers of second-hand shops.

• Colourful Czechs dislike some of the typical commodities, such as microwaves, dishwashers, fryers, and televisions; though many of them use a PC and e-mail. Above all they have a distaste for cars. It does not mean that none of the respondents owns a car. Sharing a car, as well as the decision to get rid of it in the future, are common, especially in the Dutch sample.

• Both Colourful Czechs and American Readers learn basic skills that promote greater or smaller *self-reliance*. Colourful Czechs are able to adapt the running of their households to unfavourable economic conditions successfully. These people help their housekeeping by growing fruit and vegetables. Preserving, bottling, making and repairing furniture, and sewing take place every day. But we cannot say that it amounts to making a virtue out of necessity.

• These features (especially the last point) are further demonstrated by their choice of "*schumacherlike*" work activities – crafts and farming, and art work. However we can find Colourful Czechs also employed in public administration and conservation, etc.

• The path to low consumption is a relatively slow process, not a matter of resolution.

• It seems that all the studies confirm, more or less, Ronald Inglehart's idea that *socialization in safety and relative (1) affluence* is a precondition for non-materialistic attitudes.

• The voluntarily modest have a very *wide sphere of communication*. By no means are they "hermits". Both Colourful Czechs and American Readers (and probably also Dutch Doctors) have a wide network of friendly contacts and are politically engaged. In the Czech sample there are a number of members of local authorities.⁷ Many of them show an altruistic interest in the handicapped and conservation.

⁷ Here it has to be said that there is a difference from the 1960s when those in revolt tried to free themselves from obligations to their social surroundings, family included, and often refused to participate in political decision making.

• The lives of both Colourful Czechs and American Readers have their *basis at the transcendental level*. The Czech respondents most often profess ecumenical Christianity, but some are also influenced by other religions. The American Readers indicate that they are involved with Buddhism, Zen, and Transcendental Meditation more often. It is a pity we learn so little about the importance of this dimension regarding the Dutch Doctors.

• We can affirm in case of the American Readers and Colourful Czechs, but only infer in case of the Dutch Doctors, that they expressed trust in other people and have the feeling that their lives are happy, resulting from a sense of their place in an ordered world.

What *features of the Colourful Czechs differentiate them* from the other samples?

• The basic difference between Colourful Czechs and Dutch Doctors is *economic status*. In contrast to the wealthier-than-average Dutch respondents, the Colourful Czechs are content with lower earnings than the Czech average. Their earnings per person are approximately on the boundary of the poverty level. (But the income levels of American Readers tends to be lower than that of the general U.S. population as well.)

• It has been said that the voluntarily modest people of all the three samples are relatively highly educated. It should be noted though that the Czechs often drop out of higher education or choose not to make use of it in their jobs. *Escape from technical education* is common.

• *The inclination to more traditional ways of life* appears to be a key feature within the Czech sample. In many cases, they are inspired by the lives of grandparents once living in rural areas. How in concrete terms do these traditional inclinations demonstrate themselves?

• Colourful Czechs are distinctly family-oriented. They have *more children* than the Czech average (which could be true for the other samples). Nevertheless the other family features of the Czech sample contradict the concept of the western family more consequentially: *Working at home (not commuting)* is typical. Colourful Czechs *share their households with their elderly parents*. Their lifestyles also exclude unmarried cohabitation, which is relatively common within the American sample.

• In almost none of the Czech families that we met was the mother employed. These parents of a number of children do not share the opinion that "you cannot live on one salary". Here we also observe the traditional division of male and female roles, which seems not to be true of the sample

of the Dutch Doctors, with women's professional emancipation. Elgin expresses the strong affinity of his respondents for the spirit of the feminist movement, which is not the case with the Colourful Czechs.

• The Colourful Czechs' bond to tradition is also confirmed by the type of settlement where the majority of the respondents live. Approximately *two thirds live in a small town or a village*. At the same time these are not people who have lived in such settlements from childhood. Mostly, they were born in the countryside and grew up there, but after some experience in the big city they returned there. This "back to the land" tendency is missing in both the Dutch Doctors and the American Readers.

• In spite of some similarities in eating habits between the Colourful Czechs and the members of the other samples, there are also some significant differences. *The eating habits of the Colourful Czechs spontaneously follow the traditional and rural way of life, including self-sufficiency*. The inclination towards the ways of their grandmothers' cooking is evident. This means the near elimination of meat, but lots of potatoes, cereals, pulses, vegetables and fruit. The American Readers' struggle for self-sufficiency and to eat simply is more likely the result of both environmental awareness and conscious "inner growth". Well-informed Dutch Doctors follow the nutritive trends and environmentally beneficial aims, buying organic food in special shops (and sometimes depart from their modest eating deliberately, as we will see).

A Side Effect or the Result of Conscious Effort?

For the most part, *the Czech respondents are not oriented primarily by environmental intention*. More often, they are led to its lifestyle rather spontaneously by inner, often Christian, values: Their lifestyle is absorbed by both family and social activities so that *they do not enjoy shopping and travelling*. Their self-restraint is an unintended and intuitive outcome. In this respect this is similar to some of the American Readers. They talk of their modest lives as the consequence of the "inner growth".

The life of the Dutch Doctors is more often consciously oriented by their efforts to free themselves from common mainstream consumerism, present in lower social strata. Besides, *environmental motivation is significant*. These highly educated and wealthy people are often members of an environmental organization (which is, in most cases, only a matter of contributing money). They know what personal "environmental virtues" are, and strive to apply them in their lives.

The Dutch Doctors do realize the power of many consumer goods and undertake external measures and "exercises" to escape them. They try to keep the behaviour of a smoker trying to give up. For example, one married couple keep their TV set at a distance upstairs in their house, its turning on thus requiring more effort than the simple pressing of a button.

In connection with sustainable living, we often hear the slogan "A Way that is Outwardly Simple, Inwardly Rich." Now, on the basis of sociological knowledge, we know that modestly living people do not have to be rich only inwardly; they can also be wealthy and have a high income. What is relevant here, from the environmental point of view, is the *dynamism of material consumption* (buy and throw away) and its character.

In this connection, Aarts studied the way the Dutch Doctors actually treated their money that must have been superfluous. She found out that the money saved in everyday life is spent in *ritualized situations*, e.g. on expensive holidays.⁸ One interviewee invested all his savings into the restoration of his large 17th century house. Eating in elegant restaurants, or opera all count as ritualized consumption. Such a lifestyle is said to be based on the remembrance of experience, to be "non-polluting"; it tries to diminish the material impact on the natural environment. The Dutch Doctors often contribute considerable sums of money to environmental organizations and purposes. Such an immaterial consumption issue is thought-over, ecologically-sophisticated and refined. It emphasizes its form and is willing to pay for it. One can hardly speak about "living simply"!

Aarts mentions, through the self-characterisation of one of her respondents, an interesting consumption model: "penny-wise and pound-foolish". This finding answers to Reusswig's view (1994:96) on a new pattern of consumer behaviour: While an interest in medium-priced goods was typical for recent decades, today a bipolar interest in both cheap objects and, at the same time, in luxury goods, has become the prestige spending model.

A Return to a Simpler Past – or Part of Development?

The vision of sustainable living shared among groups of radical environmentalists is often built upon nostalgia for ancient times, when our

⁸ The environmental benefits of far-flung holidays are however dubious.

peasant ancestors lived more modest lives. At other times the sustainability principle looks with admiration to the simple life of tribes as yet untouched by European/American consumer civilization. Such a lifestyle is usually characterized by the term "simplicity", which carries very positive connotations in the subculture of radical environmentalists. We are to cast away complicated, useless and harmful ballast and return to the modest lifestyles of our forefathers.

Expert sociological texts seeking to solve the contemporary crisis are mostly built on a contrary stand point. They understand sustainable living to be a result of the civilization process and the peak stage of cultural evolution to date. Without always being aware of it, these works are based on a philosophy of history that expects permanent progress. Considering the relationship between man and nature, we can be optimistic on the basis of P. Teilhard de Chardin's (1955) or H. Skolimowski's (1994) idealistic evolutionism. In a similar light it is possible to consider E. Fromm's (1966) opinion – that the human race will only become reconciled with nature at a high degree of development.

On the socio-cultural level, the idea of continuing progress is implied in the quoted sociological study of the environmentally-constrained economy written by C. Schmidt (1993) who refers to the classical works of N. Elias (1939). As with R. Inglehart, he deduces a high degree of civilization from the economic maturity of the society and from the economic position of people. As we already know Aarts really did find a tendency toward self-restraint in Dutch households with high socio-economic capital, in the form of an intentional, environmentally-aware and elegant lifestyle.

Aarts and Schmidt, in agreement with Bourdieu (1989), believe that here we are dealing with class-specific tastes. By living a life built upon post-materialistic values and self-control, people of higher social and economic status want to differ from the consuming majority. The authors understand moderation as liberation from the overall consumer climate and the pressure of advertising.

Aarts and Schmidt express the hope that environmentally-constrained consumption can gain popular support. They justify this by reference to the trickle-down effect, the spreading of the lifestyle from higher status groups to those of lower status. The subtitle of Wilma Aarts's paper – "Some Characteristics of Voluntary Moderation and Its *Snob Appeal*" is fitting. When environmentally-friendly values leading to lower consumption become part of prestige behaviour patterns, they will become attractive for those

inhabitants of affluent countries who have not yet experienced the consumption peak on their personal routes.

Such a sociological interpretation, when thought through to a conclusion, lays the foundations for hope of a virtually global reach. It implicitly admits the possibility of spreading such a lifestyle by the same mechanism to the less rich countries – a crucial issue with regard to the solution of biosphere problems.⁹

However, one doubt comes to mind: The highest status group keeps on looking for new behaviour patterns to confirm its sense of exclusiveness. Once the moderation model spreads to lower social groups, the fashion of sustainable living may vanish as quickly as it appeared. Lifestyle change based on attaining prestigious positions in the social hierarchy is a relatively fast process but a fairly superficial one when regarded from a social-psychological point of view.

Fortunately a sustainable lifestyle does not necessarily have to be based solely on a social source of motivation (compare also Aarts 1993, p13). This was empirically documented in research carried out in the Czech Republic as well as Elgin's research carried out in the US. Both showed sustainable living to be rather the result of personal life trajectories, as the fruit of an inner maturing that can hardly be recorded in the categories of sociological generalization alone. This more deeply founded lifestyle has a smaller chance for fast dissemination by imitation, but on the other hand may weather the influence of fashion. As we have shown, the resources for this type of modest life are the transcendental anchoring of man, social altruism and the inspiration of older traditional lifestyles.

Does the Czech finding agree with the view of "simplicity" as an anti-civilisational return to the traditional society of the past? Despite the fact that it looks that way at first sight, significant features of the Colourful Czechs contravene this hypothesis. That might mean, for example, the idea of providing children with a university education, using modern communications technologies, as well as the direct expression of an opinion on the significance of culture and civilization. Czech respondents do not consider themselves as general critics of civilization. They are only of the opinion that some modification of the course of civilization is necessary.

⁹ The chance to disseminate modest lifestyles is rightly connected with fears of a harmful impact on production and the economy. I leave this urgent problem aside in this article.

The principal point is that the life of Colourful Czechs does not conform with the features of the traditional community in that it is *not subordinated to external social pressure*. No social order is imposed upon it through social control. The Colourful Czechs seek it themselves, proceeding from their individual freedom,¹⁰ which is given to them by the growing individualization of modern society (compare Beck 1989, 1993, Giddens 1991).

They were passing, during their life trajectories through the experience of a still traditional, frequently rural, mode of life and then through the experience of life in a big city. They were exposed to an increasing amount of information about risks associated with developments in the modern world. Of course, a subtle stream of a sub-culture of voluntary modesty might slowly be created in some groups of young middle-class people in the Czech Republic. However, at present, a modest lifestyle in Czech conditions can best be seen as an individual solution made under the social conditions of a rapidly changing society.

The basic lifestyle of voluntarily modest people in the Czech Republic may be understood as a result of that so frequently discussed *jump in the development stages, which can be regarded as some hope for the future evolution of the developing countries*. At the same time, it can be seen as a confirmation of the opinion that self-restraint is part of a high degree of civilization transformation.

The question facing the sociologist is, what operable features in fact place their bearer at the development peak that evolution-oriented authors speak of. With regard to the empirical discovery of voluntary modesty in a relatively poor country, it is possible to doubt the adequacy of the common socio-economic delimitation of the importance of belonging to the inspiring elite. In relation to sustainable living it could be more appropriate to stress access and sensitivity to knowledge (Schmidt, 1993, p. 40) and cultural capital in a very broad sense.

It has already been said, and Elgin's research confirms it, that the types of sustainable living described are probably not linked with certain countries, that is, those with a certain level of economic prosperity. It is possible to expect that sociologists could find modest lifestyles in Holland that are a modification of the lifestyle of Colourful Czechs, i.e. characterized by

¹⁰ If we venture a greater generalization, an association comes to mind related to Teilhard de Chardin's idea about the transfer from an individualizing to a personalizing stage.

relatively low income, being rural, traditional, family and community oriented, and with a transcendental dimension.

The set of voluntarily modestly living American Readers shows a number of these features. It is in fact possible for some of the features mentioned to coincide in the Dutch Doctors with high socio-economic status and thus also to be present in Aarts' elite set; the hypothesis on which her research was designed did not allow for these to be investigated.

Let's not Inflate the Importance of these Examples of Sustainable Living

There are probably many other variations on modest lives that this article omits. It has for example left out the programmed modesty of members of radical environmental movements and the sociologically-interesting lifestyles of alternative communities. Also, let's not forget that we did not consider lifestyles outside the European/American context. The existence of various approaches or tastes that we might call sustainable may be understood as a source of hope.

Despite this, the lessons of history should make us cautious when judging the social phenomenon we call "voluntary modesty". The attempt to be moderate is not a new late 20th century phenomenon that has turned up as some auto-regulating self-preservation mechanism at the moment when the human population is overshooting its limits. The value of modesty is a part of the constantly present counterculture that accompanies like a faint line the general growth of Homo sapiens which is based on aggression towards nature and the maximizing of personal profit.

The ancient roots and long tradition of attempts at moderation are documented by the opinions and lives of the Greek philosophers, the literature as well as the lifestyle of late Roman intellectuals (Kysučan 1996), and the asceticism of hermits and of many religious orders. We have come across the orientations as well as the sincerely meant modesty of romantics from a number of periods in both the European and non-European history. Attempts at such a life usually remained on the margins. When implemented on a larger social scale in various movements and sects, they become more of a memento for us than a model suitable for following.¹¹ It seems that such a longing for an ideal lifestyle turned to failure and dangerous and cruel

¹¹ Who comes to mind in the first place probably will be the medieval Waldenses or Fourier's Falanges and Owen's New Harmony. These are though mere the most famous of hundreds, if not thousands of scientifically described as well as forgotten movements.

reality where an attempt was made to put it into everyday practice and to rapidly disseminate it.

We can interpret the existence of the historical counterculture ambivalently; it may be evidence of the tragic inability of this strand in our civilization to assert itself with any permanence against the ever-present desire to maximize personal material profit. We may also view it as an anthropological or at least historical constant upon which it is possible to build.

Such counterculture can be grasped as an undercurrent *pulling* humanity against the prevailing forces of a predatory technological civilization, or at least weakening its influence. Now, when the human race is under pressure, there is an existential *push*, as yet unknown in history, to implement a wide spectrum of changes, which contributes to the counterculture. Thus we can hope that something that effectively acts like a "push-pull" mechanism will be created (compare with Elgin 1981, p37). The extent to which we can accept such an optimistic interpretation is up to us.

The principal question remains: can sustainable lifestyles become firmly entrenched in large enough populations over a short enough time-scale to have an impact on the rapid environmental degradation of the biosphere?

Translated from the original Czech by Alena and Simon Hooper

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Alternative of a Little Country in the Big World

by Juraj Mesík

Let me begin with the highly popular concept of a sustainable development or better – sustainable life. One of its – in my opinion the nicest – definitions says that sustainable development lies in utilizing unlimited capacity of gray matter instead of utilizing limited natural resources. How do we achieve such development when the world of this century vehemently, and on a global scale, is determined to exhaust natural resources along with systematically suppressing gray matter by means of ideology, advertising campaigns and fashionable trends? This is perhaps the fundamental question of the immediate future of humanity.

Aside from massive brainwashing, there is another problem in Slovakia to be considered when thinking about global future: What can be done to solve global problems in a Lilliputian country? It seems like every small country has just little prospect of influencing the world processes in the conditions of a global economy. There are forty cities worldwide with the population of the present day Slovakia. To compare the economy of Slovakia, there are dozens, maybe hundreds of transnational corporations with the same strong or stronger economies. Any American senator or a Russian governor has the same political influence as the Slovak parliament or government has... Does it mean that the only motive why we in the Central Europe should ever consider alternatives of development and think about global problems is moral imperative – to oppose a recognized evil – in this case with a destructive development trend? And to do it while thinking that whatever we accomplish here only means a bit in the planetary context?

Maybe it is like that. Though there is also a different experience available which shows (and it is still valid in the second half of the 20th century) that also small countries and communities can play an important role in finding answers to big questions. Let's take Denmark with the population of 5 million people as an example; it is known as a pioneer in finding energetic conceptions of the future that combine radical decentralization with technological advancement. Denmark shows that even a small country can go beyond its geographical and economical limits while new visions are born there and important ideas are examined.

Thus we've got to a common denominator of crises of a human civilization and crises of this small Central-European country. The common denominator is called a missing vision. If only Slovakia lacked a vision, it wouldn't be any tragedy. Sooner or later, Slovakia would overcome absence of its own value system and would welcome the vision of the surrounding world. In the same way it happened in the history of this territory a number of times. The real trouble is that the missing vision is a global problem. The only "vision" presented by political elite at this time is a vision of connecting SubTatra country to the European Union and NATO. I am all for it – but we shouldn't forget that the vision of sustainable future will not be awaiting us in integrated Europe either. What actually awaits us there is merely increased feeling of a desired safety – and further extension of the destruction of consumerism.

In spite of some strange politicians' forecasts of various Slovak supremacies and triumphs in 2010, the reality is far less optimistic. Even after a delayed admission to European Union, the Slovak society will not prosper above the average. A majority of the Slovak population will be faced with the future, comparable to recent past and the present of East Germany, with the exception an extensive flow of German marks. Also in EU, we will only be poor relatives of the Czech Republic and Austria with high unemployment rate that will affect (as today) mostly provinces except of several flourishing cities. Very probably the only competitive advantage of this country could be its relatively preserved nature, biodiversity and national parks. Of course, only if we do not happen to convert them into Disneyland or poor imitations of Austrian or Swiss Alps within a decade – for example, in the name of chimerical progress in view of the winter Olympic circles.

The membership in EU and NATO is needed but not self-serving. The sooner and the more we will speak about the horizons of development outraching the moment of integration, the greater our chances will be not to be taken by surprise after it happens – finding out that fundamental problems have persisted and many new ones have emerged. If cultural elite does not prepare inhabitants for integration, it can turn out similarly as in German Democratic Republic (the only country integrated so far). That is, disillusion and disappointment as well as inferiority complex (or feelings of being considered second- or third-rank country) will emerge. This will result in apathy and resignation and on the other hand in nostalgia for the old regime and relapse of communism and nationalism. One of the most drastic signs of German integration shock is a demographic depression in the federal countries of Eastern Germany. Its digitized picture reminds

demographers nothing less than war. The numbers are inexorable and even if the brain doesn't want to accept it and the eyes do not want to see it, in the decline of birth-rate and growth of death-rate, the former Eastern Germany (in spite of a continuous flow of millions of marks from the west in a certain period after the re-union of Germany) outpace even Russia with its epidemic of alcoholism, criminality, poverty, war, AIDS, tuberculosis and other illnesses.

We can envision with likelihood almost identical with certainty that after our admission to EU, Slovakia will have to face in a psychological area similar (though perhaps less dramatic) scenario as that of Easter Germans: The future of the "poor relatives" accompanied by the deepening inferiority complex and also its hypercompensation in the form of strengthening primitive nationalism and egalitarianism of the disappointed poor majority. Also, with the risk of relapse of the Slovak political development in 1992-1998.

Psychological adaptation will be accompanied by inevitable aging of the population on one hand, and growth of the dependent the Romany population and the on-going ebb of brains and the young generation on the other hand. The scenario of the massive outflow of the young and well-educated people happened for instance in Bulgaria and Romania in the nineties. Out of the eight-million-population in Bulgaria, 400 000 of the young, primarily well-educated inhabitants, emigrated to different countries in the course of about five years. From among current graduates of Romanian universities, every second escaped for the West within two or three years after graduation. So far, Slovakia avoided such massive braindrain but it was just the political turnover in the elections in September of 1998 that averted exodus of the young, educated people for now.

So, we have defined the initial parameters of the Sub-Tatra country in the first decade of the 21st century. The less promising they are, the more serious is a need to search for, and build strategies that could (if not exclude) at least abate and adjust the unwanted scenarios of the future. **These strategies, in my opinion, should arise from the concept of the quality of life, not run after the growth of GDP or another, merely financially understood indicator.** In other words: if we know that we will not dispose of the purchase power comparable to that of our western neighbors, let's then concentrate on the achievement of a comparable – or higher – quality of life. It is precisely the high standard of living accompanied by the lower level of material consumption that might cure the frustration from the comparison

of monthly incomes with the sums that young and educated people could retain to live between the Tatras and the Danube.

In my mind, the concept of the quality of life often merges with the concept of health. Health is defined by the World Health Organization (WHO) as a state of the physical, mental, social and spiritual well-being. High quality of life is then – roughly – the state of such complex well-being. It doesn't necessarily mean high balance of a personal account either a high level of consumption. Money can help achieve high quality of life; however, not replace it. What can help high quality of life more than money, is high social capital and at least minimal and inexpensive infrastructure for healthy and sustainable life.

The concept **social capital** was introduced into literature by American professor Robert Putman in the nineties. Putman in his work "Making Democracy Work" reached the conclusion that it is a different level of social capitals in both regions what causes a tremendous gap between the poor and backward Italian South and the rich and prosperous North. These differences persisted in spite of the fact that Italy has been a uniform country for more than 100 years. The social capital was defined by Putman as density of formal and informal civic groups working in a community, density of their mutual connections, ties and webs, and from them resulting high standard of mutual trust among citizens of communities. The social capital is a result of natural historical development of a particular community, and is – according to Putman – a decisive predestination of its historical success. Italian North is successful because its cities and regions dispose of high social capital. The South us backward since its social capital is underdeveloped.

Supposed that Putman is not wrong, the way towards success of communities in the post-communist world – its cities and regions – including successful coping with the integration shock (and maybe even with such strategic challenges of the 21st century as that of sustainable development) leads through strengthening of their social capital. Its strengthening is not impossible. Even if the social capital is a product of the long-term historical evolution, a lot of our communities – especially historical cities – have its fundamentals based.. One of the tools for strengthening of the social capital examined in Slovakia are the community foundations.

Community foundations are not a Slovak discovery. First ones originated early in this century in the U.S., from where they quickly expanded to Canada. They penetrated Europe only in the eighties, yet just to Great

Britain. First community coalitions in the post-communist world – and it seems in the continent at all – were thought, for many reasons, established in Slovakia. At first, in 1994 in Banská Bystrica, and later in Trenčín, Prešov and Pezinok. A spark of inspiration flashed gradually further and today, there are a few more community coalitions in different stages of development in Slovakia, and other ones emerge in the Czech Republic, Poland, Germany and elsewhere.

A community foundation is a relatively sophisticated grant foundation operating within a defined community – mostly a city or a region. Generally, its mission to increase the quality of life in a certain community what is achieved by means of providing funds to a variety of projects proposed and carried out by citizens of the community. The fact that a foundation – as a flexible and transparent source of money available to everyone – exists in a community, stimulates the growth in number and activity of civic initiatives in a city. Projects that were accomplished and those which are planned inspire other citizens to similar actions. Also, the foundation constitutes a platform that helps various activists in the community to find out about each other as well as consult and help each other. Moreover, the foundation systematically addresses the business sector and middle class with requests and proposals for support of various activities and thus bridges those community members who have sense of community and money but lack time to do something themselves with those who have ideas, energy and goodwill but are short of funds. Thanks to the community foundation, the social capital of the community is built up – the number and activity of civic group grows, mutual ties among them are formed and every successfully accomplished project helps to empower civic self-respect of citizens and mutual trust among them. Consequently, even relatively small funds – thanks the capacity to mobilize human resources and other reserves – make also big projects gradually possible in such community. Apathy and resignation are replaced by healthy self-esteem and trust in abilities and prospects of one's self as well as one's community.

It is highly probable that along with the crises of social state now experienced in all highly-developed European countries and the U.S. (not even speaking about the poor post-communist countries), more and more responsibility (including solving social problems) will be shifted towards regions, communities and citizens themselves. Getting rid of responsibility by states will – in the whole post-communist world including Slovakia – can be definitely accompanied by decentralization and strengthening authority

of cities and villages. Cities will have much more open space to experiment with different strategies of sustaining and improving the quality of life of their citizens. As they explore and implement those strategies, they will have to mobilize their internal capacities and to permit and also broadly encourage participation of citizens in defining issues, priorities, solutions and opportunities. In places where these strategies are implemented, even current small investments in the social capital of communities produce tremendous benefit in the form of a strategically important ability to produce high-quality decisions and to act promptly.

Another area in which Slovak civic initiatives (similarly as in the case mentioned above) have become pioneers in finding alternative solutions for problems of the contemporary world – at least in the range of post-communist countries – is an area of the consequences of an aging population on the functioning of a representative democracy. Demographic aging became apparent in Western Europe as early as in the eighties, and in the nineties, it strongly impacted also many other industrial countries. Changes in lifestyle and other conditions within the last decades have resulted in a rapid decline of fertility in most of Europe. This decline it accompanied by a fast growth of the elderly people as consequence of longer life expectancy of Europeans (and Americans, Japanese, ...) and the population boom after the World War II.

Among the first experts who recognized the problem of an aging population were western economists who realized that in a short time, insurance systems will not be able to provide the necessary funds for continuously increasing number and level of old-age pensions. While two-three (or even more) people worked to support one pensioner 10–15 years ago, the time comes when one worker will have to feed one pensioner. In the countries where population grows either naturally or as a result of immigration, this time will come later, while in other countries in about 10 years. Along with rich countries, this issue concerns us – the poorer countries – as well. It seems that the Slovak social-insurance company will run out of its funds within several coming years and it won't be able to pay old-age pensions to the same extent as today. In Russia, Ukraine and other, even more ruined countries than Slovakia, this problem has become notorious and displays in the form of begging old-pensioners who haven't received their pensions for many months. At the same time, old-age pensioners strongly believe that it is their "holiest" right to get old-age pensions (ideally adjusted by inflation rate annually) because they worked them off. Together with spending money

on old-age pensions as people age, also the costs of health care rocket: according to some surveys, there are countries, in which up to about 90% of health-care costs are spent by an ordinary healthy person in the six-month-period before death.

There exist some methods dealing with economical effects of aging. One of them is to raise the retirement age. Others are encouragement of health, health prevention and culturally controversial recognition of the patient's right for a decent death. That is to replace extremely costly medication of terminal stages of some illnesses – for example oncological – by substantially cheaper and in many ways more humane palliative therapy directed towards reducing pain and other signs of an illness with the aim to sustain acceptable quality of life of a dying patient – till the moment of death. Implementation of such methods yet strikes against lack of political will, and frequently even political opposition.

Draining unproductive economies by old-age pensions is just one, though important, dimension of an issue of demographic aging. Another dimension, sneaking and maybe worse, is a continuous shift and strengthening of power of the elderly in democracies. While in 1995 old-age pensioners (in economical terminology referred to as “post-productive component of the society”) constituted 14,4% of the Slovak population, according to official prognosis it will be as many as 25% in 2015. On the contrary, while pre-productive population of children constituted 22,2% in 1995, according to the same prognosis it will be only 12,9 – 15% in 2015. Since people younger than 18 do not have any parliamentary representation in the present-day democracies, the growing number of voters – retired people (and people before retirement both distinguished by high participation the elections) will have ever-growing influence on agendas of political parties that will be more and more determined by and dependent on voices of the elderly. This situation can result in “**gerontocratic democracy**”, signs of which have – by the way – already become apparent in numerous countries.

It is generally known that older people, mostly noted for lower level of education, determine the political orientation in the Central and Eastern Europe. State-paternalistic life experience of old-age population groups resonates in the massive support of seniors for the communist like, populist parties and streams, in so far unsuccessful but periodically repeated attempts to establish parties of the retired, or in a crazy race for increase of old-age pensions which we recently witnessed during the election campaign in Ukraine. Though, similar problems exist and deepen also in established

democracies which have to face them in a little bit more sophisticated form. For example, in the U.S., federal expenses per one retired are 8-times higher than those for a child. In a large extent, it is a consequence of insinuating politicians into a favor of the retired who possess majority of votes. Professor MIT and advisor of the President Clinton, Lester G. Thurrow, finds in this context the present-times and the future of American democracy warning: “This completely unproductive, ever more numerous and politically influential, though already today extremely significant and greedy class (of retired people – note by J.M.) is able to waste majority of what we should spend on the future ... The older the society, the more reluctant it is to invest... In a contemporary America, retired people already vote against expenditures on education, research, and infrastructure. They represent 28% of an active electorate because the young people are more and more unwilling to vote. Therefore, expenditures on education are curtailed year by year.”

From the viewpoint of the burden that humanity poses on the Earth, decline of fertility is a gladly received trend. On the other hand, shrinkage of the young people and increase of the elderly breaks the fragile, temporarily set, but unsustainable, dynamic balance between the nourishers and the influential nourished ones. The numbers of old-age pension holders claiming higher and higher old-age pensions increases more rapidly than those of people having jobs who could finance justly worked off pensions. The present balance is quickly violated and the tension which might overgrow into intergeneration conflicts arises. In that conflict, the influence of the elderly voters will far outweigh that of the young generation for a long time – for the duration of at least two, maybe three generations. Inability to pursue opinions of the young generation in regard of issues of internal redistribution of wealth and other political issues within democratic system, can result in several countries, including Slovakia, in solving these gaps outside of the parliamentary and democratic grounds.

Breaking the stability of democratic systems by breaking the existing relative inter-generation balance has been, different from economic consequences of aging population, so far a very little discussed topic, including the academic field. There exist even fewer practical solutions available focused on prevention of democratic marginalization of the young minority. One of a few attempts to anticipate this issue and precede its negative impacts, is now taking place in Slovakia, as probably the only post-communist country. The pioneering task of a tiny Slovak elite is maybe, with regard to

rigidity of industrial tops ruling this country, in fate of failure. However, similarly to community foundations, also in this case the above mentioned task exceeds the narrow circle of countries in the process of transformation, and it is also applicable to other industrial and postindustrial countries.

I am speaking here about an effort to pursue lowering of age from the present 18 (basically universally spread) to 16 years for appointing suffrage, and later implementation of the full democratic representation of all inhabitants of the country – that is not only of adults – in the parliament, in the community and regional councils. In this way, only two age groups would be let in the democratic political process in the first stage. Though it is not sufficient in order to balance the political influence of quickly growing numbers of old-age pensioners, it is a step in the right direction which could at least partially contribute to mitigation of the present unbalanced state. In case of successful implementation of this first step, Slovakia will not be an absolute pioneer in this field because such a precedent functions effectively on the level of the local elections in Lower Saxony. In spite of that, a successful change in Slovakia can significantly contribute to a **global recognition and implementation of political rights of the younger generation as of a civilization norm**. Compared to Lower Saxony, it is worth to mention that suffrage for 16-years-old is pursued here as an initiative from below: at the time of writing this study, young people collect signs for a petition requesting that the parliament approves suffrage to age groups between 16 to 18 years old. Even the leader of the ruling political body and the present Slovak premier in one person has repeatedly publicly supported this request during the election campaign.

An economic power of miniature countries preordains their small influence on events on a global level. However, it doesn't necessarily have to mean that a small country in a big world is predestined for the role of a small pawn on the scene of history. In the sixth century AD, small Ireland (one generation ago still barbarian) saved the Latin Christian civilization, the written culture of western civilization and Latin advancement of knowledge. Ireland did not just keep the position of a passive rescuer: the Ire-Scotch missions functioned for two centuries as an engine of Christianization and re-Christianization of a barbarian Europe, Christianization that a generation before a Byzantine mission affected also Great Moravian Slavs. At the close of the 19th century, it was neither imperial Great Britain, nor cultural France, nor industrial Germany, nor an emerging great power of the 20th century, the U.S., which first introduced suffrage for women that has later become a cultural norm of

Euro-American world. This right has become a reality for the first time in the history on an archipelago in the Pacific ocean, in the middle of nowhere – New Zealand.

Small countries in the middle of Europe at the beginning of 21st century maybe would not have to resign of their potential in assisting to form a big, sustainable culture and civilization, either.

We Fear Ourselves and for Ourselves

by Teodor Münz

Earthly nature is arranged in such a way that every animal uses it only to the extent that it is adapted to use it. A predator is adapted for hunting other animals, and if it doesn't use its abilities, it will die. A bird must fly; and if it doesn't, it is defective. It is a different thing when a bird like the ostrich stopped using its wings, for then it must have – as the ostrich does – other possibilities for finding food and to survive. We can state that the law that applies in nature is: Those who have power, have the rights. All animals behave according to these natural laws. Physical strength, skilfulness, stealth, and other qualities are decisive. In this sense, the most powerful individual wins. Nature doesn't guarantee anything to anyone in advance, not even the right to live; everything needs to be secured. Along with hostile relationships in nature exist also social and symbiotic relationships; however, these traits constitute just one of several forms of power that guarantee survival.

A human being is also a natural creation, and he has the greatest intrinsic rights in nature, if we are to judge according to his power. This power is getting larger and larger, especially as a result of the development of the human brain, science and technology. Paradoxically, while in ancient times man competed with beasts of prey for survival, today, out of all living nature, man is only threatened by invisible microbes. There are a number of views which claim that man will gradually gain more and more control over some of the natural elements that have ruined humanity so far. In terms of man's capacity to intervene in his second environment – society – the future is far from certain. Man has gained control over his first environment – nature – much sooner than society because nature is simpler. It wasn't necessary to take into consideration the special demands of society.

This power that man has over nature is neither incidental nor intentional; it is not a gift but a consequence of man's development to date, and of his specific role in nature. I say his development to date because at this time, man already knows that he doesn't have to or, in a certain sense, he even must not use all of his natural rights. In particular, he shouldn't use those rights which harm first of all himself and then also the rest of the natural world, of which he is a part.

European man started to use his natural rights to their full extent only during the early part of the New Age when great scientific, philosophical and other cultural personalities laid the fundamentals of our present era. In the Middle Ages, people turned their sights towards heaven and used nature only minimally. They were uneducated, poor, hungry and sick. Humanism and the Renaissance discovered the pagan, the world of antiquity oriented towards earthly life, and they found that there may exist other, far more attractive and richer forms of life and thinking than those which were known to Christianity at that time. Thus, in the intentions of the old world, a new one was built. Knowledge of nature and its technological management should have become a source of earthly welfare for man, his material security and health. Science was supposed to provide education; free him from the old feudal beliefs, superstitions and prejudices; make him stand on his own feet; free him from nature and society; and make him tolerant, democratic, and humane. These qualities are known as the watchwords proclaimed by the Enlightenment and the ideals we have been pursuing up until now.

When philosophers like Descartes, Bacon, Spinoza and others oriented New Age man towards nature, which was till then a little known repository of his material wealth, when they accentuated the need for his domination over it, when Campanella preached that we can do only as much as we know, when Bacon stressed that knowledge and understanding is power, when Spinoza claimed that we can use both living and non-living nature as we like because we have the most power, when (as early as the 18th century) Kant told sheep – speaking on behalf of man – “The fur you are wearing wasn't given by nature to you, but to me”, they sincerely tried to help man. They had no idea of the destructive effects their thoughts could have on the whole living environment, and the backward effect on man himself. An author of fertile thought cannot always think through all its positive and negative historical consequences; just as the first mountaineer had no idea of what he would cause when he loosened several pebbles on a steep slope. At the beginning of almost every event there are good intentions. This is unequivocally true in the case of the above mentioned authors.

Eventually, these authors only repeated and developed what was said a long time ago in the crib of our white civilisation and what the Old-Testament-God commanded us to do – such as “Go forth and multiply”. It isn't necessary to repeat these generally known directives today. In the early New Age the time grew ripe for this, *de facto* “first Commandment” (as one

theologian told me long time ago), to be carried out. How it turned out, what the consequences of this Commandment were and are – their list definitely not being complete yet – we can already see these days. Even a biblical author could not predict what would happen.

Consequently, none of these authors can be blamed for the results of their thoughts, as they have been until recently. Descartes, who recommended domination and ownership over nature, wanted “primarily to sustain health”. This has happened and many illnesses were cured. However, we have gone so far that good has turned against us and has become evil, the boomcrang has returned. Medicine can be credited for overpopulation, which is perceived by many people to be the cause of the current environmental crises. Medicine also impairs the quality of our genetic fund, for it sustains physical (though not always mental) health of many elderly people. With the help of science and technology, surgery performs absolute miracles and promises many lives saved along with a high state of physical health for further millions of people. More and more questions emerge in the face of our traditional morality, and it is no incident that they relate particularly to medical ethics. All this Descartes couldn't foresee.

Similarly, today we cannot blame Christianity, nor its more conservative branch Catholicism, for the fact that in accordance with the overall New Age trend, it referred the believer, especially in the Enlightenment, towards nature as a substitute for God. According to idealistic mechanism, nature is a machine and in its principle is reflected God's will which should be recognised and obeyed. God allegedly doesn't perform miracles anymore because it isn't an honour for him to fulfil contradictory prayers of the believers. However, he has given man nature with its unchanging laws and intellect to help himself. And thus it seems that what a believer gets from nature he actually gets from God. No wonder then that Bruno, Spinoza and then many others deified nature, and that pantheism played such an important role in New Age philosophy, even though it was rejected by Christianity. However, Christianity also unintentionally supported the pending environmental crises. It was simply the spirit of the time that penetrated all its cultural components and imposed on them a unifying character.

I see the cause of what happened in the nature of our white civilisation. As Max Weber pointed out a long time ago, we are the most rational, scientific, and technical civilisation; we tend to dissect, rationalise, and systemize. We make scientific conclusions all the time and then put the results in practice. Thus, what has happened was our fate. It was already

expressed a long time ago in Judaism when God was separated from nature in Old Testament, he was raised above nature and made its Creator and Lord. And man, created in his image, was supposed to do the same. And who would resist such a kind commandment from one's God?

However, as “we are destiny”, today we realise that we have gone too far and in the wrong direction. The Old-Testament-God analogy did not turn out to be rewarding for us.

I think, however, that we should not blame ourselves for what we did some time ago. We only acted that way until we realised that out of the small pebbles freed by our ancestors several centuries ago we have unleashed a huge avalanche, the consequences of which can be averted only by us. Unless we do it, we are to blame because we know what is at stake. But in what sense we are to blame, and who shall we answer to?

As I have already stated, we have the greatest power in nature, and it is still growing. Today we can destroy earthly nature in a few hours, and to be consistent, we have to say that we have a natural right to do so. Noone has created nature, noone keeps a protective hand over it, and if nature will be destroyed by its own creation along with itself, no great loss. This blindness and indifference is intrinsic to nature; as it is to the capacity to reason that was given to man by nature and reason's creativity and annihilation that occasionally reaches much further than nature's own. (Where there is creativity, there is always also annihilation.) It seems as if nature has created man only to continue where it ends. Man has taken this role and proven that an apple does not fall far from the tree. However, our creativity terrifies us as it releases atomic energy; interferes with the genetic fund of all living things and is about to saw off the branch on which we have been firmly sitting until now. Today, the human spirit is capable of behaving in nature as if it were its fifth element, formally ranking itself among the classical four elements: air, fire, earth and water. As the elements, it can be a good servant but a bad lord. But what is human annihilation compared to what earthly nature has destroyed so far? It is continuous change; time which we cannot manage yet – and how this upsets us! It is continuous destruction, while at the same time creation; life and violent death (not excluding human), all of them being as certain as day and night, light and shadow.

However, if nature is indifferent, we are not, and if nature within us goes too far, we tend to put on the brakes because we are afraid of our self-destruction. Or maybe that is not the case. Does nature not want us to destroy ourselves if it gives us the capability to do so? We really behave in

this way at times. In fact, we are provoking death more and more. It is evident not only in regards to weapons of mass destruction, but also in several new sports in which our survival or death is at stake. Why is it so? Perhaps because death is the borderline, the limit; even though we do not recognise boundaries or limits in anything. Why should we then provoke death? If we once die as a result of our own hand, it will probably happen because a possibility tends to become a certainty.

Presently, we are afraid of our mass self-destruction. We fear ourselves and for ourselves, as well as for our progeny. We see that we have to limit our natural rights, not make use of everything we can accomplish. Freedom allows us to do so. Although it was freedom that led us into the global environmental crisis we are in, freedom now enables us to wade out of it. Man is probably the only natural creation who does not have to use all his natural rights. He can give up some of them, create his own, or change his attitude towards nature in many ways. In that lies man's chance.

Thus, from the viewpoint of our natural rights, we are not guilty before nature. The concept of guilt is absolutely unfounded; similarly, we cannot speak about guilt of nature before us. We could say that we are guilty before nature in the sense of not wanting to use everything we were given by nature. But let's put these speculations aside. We are guilty in the first place towards ourselves, towards our life interests, with their prospects still getting worse. We can definitely be empathic with the situation and suffering of another life threatened by us. Also for that thwarted life we can sincerely feel guilty, and a lot of people do these days. This is an emotional standpoint and the empathy felt is based on analogy with ourselves. However, the brain says that it is our natural right, or even obligation, to step in the life spheres of other beings, as they constantly step into our sphere. They do not feel guilt towards us – they cannot – and that is all right. Still, empathy is strong motivation and an "argument". We will not intervene in life spheres of living things which are harmless to us because they are our brothers in suffering, who also belong to life. We suffer the most, but we have the ability to reduce the suffering which we have caused others. We want to do it because we also have freedom in this regard. Therefore, if I were to prioritise anthropocentrism, bio-centrism or cosmo-centrism, my choice would be: first anthropocentrism, then bio-centrism and finally cosmo-centrism.

Thus we have transferred the concept of guilt somewhere where it essentially doesn't belong. How is it, however, with other concepts used today in our relationship towards nature? We really want to change ourselves

and orient ourselves differently. I think that proposals for our new relationship contain a great deal of sentimentality, excessive sorrow and penance (as usually happens when a culprit steps inside himself and wants to improve), or on the contrary, too much arrogance and possessiveness. What is then the other side of the coin? What is the basis of our huge power in nature and where does it originate? What can we do in practice? Let's begin with an analysis of the notion of our domain over nature, the idea with which everything began ...

The relationship of a master and a slave, a lord and a serf is also taken from interpersonal relationships. As ecofeminist analyses have shown, Bacon also understood nature as a human being, a woman, a serf whom it is necessary to subjugate. However, at the same time, Bacon pointed out that we can subjugate nature only through respect. It is the opposite in interpersonal relationships. Here the subjugator can do with the subjugated what he wants. He can demand from him certain actions which might be aimed against his own natural behaviour, interests or thinking. However, we cannot force anything from nature against its natural laws. It is then a domain upside down, the domain of a beggar who knows and respects the nature of his donor in order to capture something from him. How many times has the donor failed to secure something, how many times has the donor made fun of him, how many times has the donor quashed the beggar? Is it even possible to speak about any domain? Is nature really our servant?

Man, "the lord of nature" cannot change a single natural law; his will or unwillingness does not matter in this case at all. However, man can (with the recognised laws) intervene in its subjects, arranging and combining them, and thus initiating new reactions in nature to serve him. An ascending aeroplane doesn't disturb the law of gravitation, and the engine is there partially to overcome gravitation, not to destroy it. Everything runs in accordance with the laws of nature and in nature. Creative, "nature altering" man is, and can only be, a piece of nature as is a river, earthworm, or bear. He is different from them only in quantity of chances to form combinations and variations which nature hasn't formed. However, nature applies its laws right away. Since Bacon's time, man has been consciously doing what he had been doing spontaneously before, and what all living creatures have been doing since recorded time.

Briefly, human dominion over nature is an exaggerated concept, although human obedience to nature is sufficient when it comes to destroying it. Nature allows man to destroy it, in accordance with its own laws, if he finds

a key for it. The word dominion is then an anthropomorphism. It is similar to other concepts used when we refer to nature, requesting that in the interest of eliminating the environmental crisis we change our behaviour towards nature. They all evolve from human morality, while being almost as sickly as dominion, which shows little respect for the specifics of the relationship between man and nature.

Much is said today about human responsibility. We should try to stop our attempts to be lords of nature and take over responsibility for it. Thus we should not destroy it more than necessary and should care about how life flourishes in it. That is a far more modest request than dominion, though still a difficult one, and we can meet it figuratively, only at the lowest level of responsibility which we know in society. When I take over responsibility for bringing up my child, I act according to the goal towards which I want to lead him. I intervene in his development, possibly turning him aside from a direction he would naturally take. Not even in this case can I change a single law that rules over him, but my chances of manipulating this living (and to me the closest) human being, whom I understand best, are far greater compared to non-living nature. Of course, even in this task my plans often fail.

I cannot have such intentions with nature. I do not know its aim (if there is any at all), and to try to lead nature somewhere would be as unsuccessful as to be its lord. I can only adapt to its natural course and try not disrupt it by my actions. I can decide not to kill in nature at all, but I have to calmly observe how nature itself kills, how the stronger kills the weaker, and I can even decide to support this natural course of events. Though I would not feed hares to a fox, I would feed my cat (for which I overtook responsibility) meat because it is a predator. In that way, I would do something for my cat that I myself do not do anymore because I am a vegetarian, even vegan. Is it responsible at all to breed and degenerate a pet cat which should belong to nature and take care of itself? In the past, it would at least catch mice, but today I do not need it. However, if I expelled it back to nature it would die, as it is no longer a wild cat. What should we do with zoos, with the poultry in our backyards, or with various breeds of dogs which do not belong in nature at all? Should I help these creatures die out? Do they not have the right to live as well? I severed them from nature irresponsibly, and I cannot responsibly return them. Thus, in my limited responsibility towards nature there are still big issues, and firm boundaries do not exist. Everything depends on my attitude.

Though I will not destroy natural biotopes, my responsibility will come to an end at the point when lice would find their natural biotope in my head or a field mouse would make its home in my barn, not to mention the microbes which flood my organism when I get sick.

Principally, from the viewpoint of our natural rights, we do not have any responsibility towards nature, as nature doesn't have responsibility towards us. The principle "who will benefit at whose cost" applies. Our responsibility towards nature is basically and primarily the responsibility towards ourselves, though with regard to nature. This responsibility is very limited. In the best case it is passive because it leaves untouched what hasn't been destroyed yet. In the worst case it is active because it fixes what has already been destroyed. Boundaries of this remedy for change cannot be precisely defined. Things get complicated because, while we have responsibility in nature towards ourselves (and therefore have to be actively responsible), we have to destroy for our sake. To what extent only depends on our new attitude, new world outlook, and new hierarchy of values. It is our moral obligation to live and save the lives of others, to further experience nature, to take from it as much as we need to live in dignity, to defend ourselves against everything that endangers us, and to kill or even to exterminate pests whose biotopes are in/on our bodies. We have a good reason to be proud of being able to exterminate bacteria causing chicken pox.

In ancient times, supposedly, we loved the animals – even hostile ones – with which we lived in nature. At the present time, however, I think that our love towards them and nature generally evolves from our satisfied need of loving ourselves. We have pacified and destroyed a big part of both the living and non-living environment. We have power over it. Therefore, we can now allow ourselves to be overwhelmed by her loveliness, warmth, and innocence. We admire predators, we make films of them – of course, with a rifle in our hands. A conservationist from the city feels sorry for wolves killed by shepherds. However, if a wolf attacked a man, then the city man would ruthlessly kill it, because of its intervention in our dominion.

At the same time, I do not deny that we are able to love both living and non-living nature completely unselfishly; we do not go for walks to avoid trampling on a great many living forms and the like. My only claim about this attitude is that it primarily results from our feeling of satisfied love of ourselves; from the feeling of domination and unlimited power. The law of shifting values applies. First I have a dog as my defender and helper, and only when I am able to defend myself better do I begin to love my dog for its

loyalty and friendliness. Then I start to develop various breeds, and finally I keep it in my city-apartment, making my own life and that of my fellowman difficult. The jungle dweller who traps parrots for food doesn't care at all about their beauty; he doesn't see it in the same way as do people who keep them in cages just because of this trait.

I think that our love of nature and altruism represent a sublimated egoism, as our ability to criticise someone calmly and tolerantly is also just sublimated aggression. We are on the whole sublimated creatures, and in that fact resides our humanism in the positive sense.

The case is similar with management nature, which is (allegedly, in accordance to the Bible) today required from believers by Christian faiths. The governor of the society not only administers and sustains but also supervises and improves – according to a plan. We have already tried to manage nature and it has resulted in deterioration. We can only try to eliminate damage and to sustain nature as much as possible. Literally, we should act as maintenance-men, mainly for our own sake, because nature doesn't need any maintenance.

The partnership we require with nature is also questionable. Nature can live without our partnership very well, it is self-sufficient. A partner who only fixes what he had destroyed before, who only sustains what he might like to damage later, is not a partner. What kind of partnership it is when we depend on nature?

Nature doesn't require from us responsibility, maintenance, partnership, nor anything from our morality. On the contrary, it "demands" that we live in the way we were made "by nature" not "by society". We should be competitive, rough, aggressive, conquering, although at the same time friendly, willing to help, loving (at least our dearest) because we were made that way. However, when we followed the voice of fellowship, and started to live socially – we were never solitary creatures – a certain part of our nature was in the way, and we declared it wrong, immoral. The remaining part was declared good and moral. Morality is a struggle between the accepted part of our natural mode and the rejected part. We have created concepts of dominion, responsibility or irresponsibility, maintenance, partnership, and others. These only make sense in the relationship of man towards man, and fit nature marginally because they assume consent and cooperation between two sides, not just one. However, in some cases, as in that of responsibility, we have created a concept which is against nature. Nature is irresponsible, and man is irresponsible when he only listens to the bad side of his personality.

We have escaped from our "mother" nature in our morality because we do not agree with it in this regard. However, we are still under the control of nature, and our disagreement with nature comes from it. Nature can afford this absurdity because it is senseless, heartless, and indifferent.

Thus, we do not have any moral obligations given by nature itself, and should we feel them, they are just supplementary. Primarily, they are just obligations towards ourselves.

I cannot agree with a great deal of sentimentality which is presently concentrated in various eco-philosophical theories. The argumentation they use often "hangs in the air" because they do not want to see certain very unpleasant facts in nature. According to these theories we are supposed to protect nature unselfishly, even though nature, both living and non-living, doesn't protect or conserve itself (including us). I think that we should be selfish and openly admit that we care about ourselves first, and only then about everything else. We should retreat only to a certain extent, not to the point of complete self-denial, and we should do so just because we are free creatures and we can.

What do we then ask of ourselves? In my opinion, a change in the world outlook, a new hierarchy of values that respect the principles of sustainable life. This means taking care of humanity, living nature, and its basis, non-living nature: in fact the whole earth. At the same time, we should get to know nature more deeply and to fight unmercifully against both living and non-living natural phenomena which still endanger our very existence. Here our responsibility towards ourselves comes to the fore, while in other cases we can mask it by altruistic responsibility for others, and for everything else. Seemingly, we need this illusion in our lives. It is just one of many with which we live.

Towards Sustainable Development and Global Governance through the Global Marshall Plan

by Pavel Nováček

Introduction

If the Big Bang theory is valid, our Universe came into existence 15 billion years ago, and our planet 4.6 billion years ago. If the theory of evolution is valid, the first rudiments of life appeared on Earth 3,8 billion years ago and inorganic evolution on Earth changed into organic, biological evolution. Only 40,000 years ago Homo sapiens sapiens appeared and biological evolution changed into cultural evolution.

At that time man was a hunter and gatherer, and he did not affect his surroundings too much. He used primitive tools, he had well-developed speech, he was capable of abstract thought and used fire. It means he could endanger himself or his immediate surroundings.

Gradually man – a hunter-gatherer – became a herdsman and a nomad. At the end of the ice age, the climate of the northern hemisphere (15,000 – 10,000 years ago) changed. The herds of animals either died out, or went north. Therefore man had to look for supplementary sources of sustenance. He developed fishing and above all, the gradual domestication of animals occurred.

At that time, man could already affect his environment regionally. The immoderate usage of pasture-land and its subsequent degradation occurred. People had to migrate and look for new territory. Fights between tribes, or the breaking up of tribes, took place. But even if man destroyed his pastures and left, the countryside had enough time to regenerate.

In the Early Stone (Neolithic) Age (10,000 years ago), a big change occurred. Man started to collect, store and sow the grain of some plants and above all he started to settle, especially in warm regions with fertile soil. This change is called the agricultural revolution. At that time, on the whole planet there were about 5 million people.

It was already in the power of man to influence and destroy intensively his environment, both locally and regionally. The Greeks, Carthaginians and the Romans managed to devastate a substantial part of the territory of the Mediterranean, above all by the deforestation of vast territories, and also by their over-intensive grazing. Because of intensive irrigation in antiquity, the

territory around the rivers Euphrates and Tigris, and around contemporary Palestine and Israel, were devastated.

The fundamentals of the development of science and technology were laid down in antiquity in the Mediterranean, the Near East and also China and India. A technologically-orientated society, however, arose from the Mediterranean and spread gradually to the north and north-west of Europe. In the Middle Ages, the land of central and western Europe was deforested and its appearance changed extensively. On one hand, the ecosystems of the mild climate zone are more resistant to anthropogenic influences, on the other hand, European culture was suddenly given a chance to expand in 1492 – they discovered America, which was colonised in the following centuries. Even here, the countryside was deforested and there were similar changes as in Europe.

Until that time, man had been completely dependent on nature and his ability to affect the environment limited. The turning point, however, came 300 years ago. Papin invented, and eight decades later, Watt constructed the steam engine, and the era of the industrial revolution began. Man started to use energy from fossil fuels on a large-scale and he increased his power many times over. The consumption of natural resources and energy increased exponentially.

Exponential growth hides in itself a great danger. For instance, the consumption of electrical energy has doubled every ten years over the last century. In the last 60 years, the consumption of energy has risen by 3–4% every year. But if this tendency continued, in 3,200 years we would need the energy of the whole Sun. So exponential growth is not sustainable from a long-term viewpoint.

Our space is limited simply by the size of the biosphere. Our resources of raw materials and energy are limited. The devastation of the environment is a signal that we have reached the limits in using the biosphere on a regional and global scale. There is nowhere to escape. So we must learn to live within these limits.

The consumption of energy from fossil fuels, exponential growth and the consumer way of life, together with imperfect or old fashioned technologies and the methods of economic and political control have caused serious ecological and other problems, which for the first time in history have become really global.

Global Problems

Here we will restrict ourselves only to the shortest characterisation of the problems, or the groups of problems, which we regard as the most essential:

1. Violence in the world. The point is not only the continuing, and even increasing, threat of nuclear conflict when more and more countries, and also terrorist groups, will have access to nuclear weapons, but also organised crime that is becoming in many countries or regions as powerful as the government (Columbia, Sicily, and above all present-day Russia). In this category, we can not only put terrorism (often supported by governments), militant religious fanaticism (as an acute form of religious fundamentalism), ethnic intolerance, but also contempt for human rights which has become so familiar to us in the recent past.

On a local level, above all in cities, crime operates like a cancer initiated by a cult of violence in the mass media and aggressive advertising supporting increasing expectations of an ideal consumer society that cannot be fulfilled in real life (it concerns mainly people in developing countries and the poor in the cities of the developed world).

2. The explosive growth in the population in non-industrialised countries (80% of the six billion people on the planet live in non-industrialised and mostly poor countries; the population now doubles every 50 years) and on the other hand the ageing of the population (in places even an absolute decline or slow "dying out") in most countries of the industrial world. If this explosive growth in population continues unchanged, the consequences are clear. But even in developed countries there may be great social unrest in the next 20-30 years when the economically active population will not be able to take care of pensioners according to their expectations.

The developed world is faced with the threat that it will become a "ghetto of the rich", surrounded by the overpopulated, poor, frustrated and aggressive "rest of mankind". Even inside developed countries, ethnic tension will increase not only as a result of a wave of immigration from poorer and unstable regions, but also because of unbalanced population growth among single ethnic groups.

3. The uneven and unfair distribution of wealth. The North - South divide has replaced the former understanding of the world divided into East and West. Today, 20% of the world's population live in dire poverty, 20% of "the elite" use 80% of the resources of raw material and contaminate the planet with waste. The equivalent of consumed energy per inhabitant per year is 20 kg of crude oil in Ethiopia, while in Canada it is 10,000 kg of crude

oil. It is possible to object that in Canada there are less favourable climatic conditions; in spite of this the rate 1 : 500 does not seem to be totally fair. (For comparison: the Czech Republic uses an equivalent of 5,000 kg of crude oil per inhabitant per year). The disparity among the population in non-industrialised countries is even bigger. The rate of incomes between the 20% of the population with the highest incomes and the 20% of the population with the lowest incomes is e.g. in Brazil 31 : 1, in western-European countries it is about 8 : 1.

This disparity also causes dissatisfaction and migration of large groups of people, a real threat of a new exodus of nations, and also the growth of religious fundamentalism in regions where the local cultures feel themselves to be endangered by the expansion of the values and the way of life of the Euro-American culture.

4. Destruction of the environment. Under this heading the most vital problems are:

- the threat to the variety of life (biodiversity) - genetic, generic, ecosystemic, and with people, also cultural diversity. Euro-American culture is dominant on the planet; Islamic culture tries to resist it (by means which are sometimes unacceptable to us) but many other cultures, above all those of tropical forests, disappear;
- the threat to and wastage of forests, above all tropical rainforest;
- desertification;
- the threat to the quality of water resources (including seas and oceans), and the threat to the quality of accessible sources of fresh and drinkable water in some regions;
- the threat to the soil (its quality and quantity);
- the pollution of the atmosphere and climate change (acid rain, ozone layer depletion, the greenhouse effect);
- the pollution and threat to ecosystems caused by waste (above all, toxic and radioactive waste, and also vast quantities of communal waste).

5. The total ineffectiveness of political and economic tools and institutions on a supranational scale. The principle of national sovereignty is problematic. It is necessary to decentralise certain powers (the principle of subsidiarity - let everything be decided at the lowest level at which it is possible), to centralise some other powers in the hands of viable and effective supranational institutions (how big a challenge it is clear from observing the present functioning of the UNO and the negotiations concerning the principles of the functioning of the European Union etc.).

In the near future, we will be confronted even with the problems of "biological revolution" (e.g. the possible misuse of the knowledge of genetic engineering), and with the problems connected with the entry of many countries into the postindustrial era (the problem of the rate of employment and the spending of free time, the division of the population into "able" and "unable" to make themselves useful in intellectually demanding employment etc.). But, it is necessary to say that many countries will remain for a long time in the stage of industrial development and that many countries will continue to be in Toffler's "first wave" – in the agricultural stage of development. This can lead to a new division of the world into post-industrial regions (rich, with a high level of creative, intellectual work), industrial (providing gross industrial production) and pre-industrial (with a predominance of agricultural production and problems with poverty, the rate of employment and competition on the international markets).

Global problems will become increasingly acute, and we will be confronted more and more with the necessity of finding a solution. It means even time is an acute problem.

How should we react to the increasingly acute local, regional as well as global problems? As individuals, and also as a society, we have at least three alternatives.

We could ignore global problems. This would mean that present trends would be preserved, we would not react to them adequately, and the situation would continue to become more acute.

Or we could acknowledge the seriousness of global problems, but sceptically think that we essentially do not have a chance to influence the situation anyway.

But, we could also try to change present trends. One possible active attitude is the formulation and implementation of a strategy for sustainable development. A frequent and natural question following the mentioning of sustainable way of life is "what is the chance of success?" We are afraid that nobody knows the answer. Even if the chance is only one percent, it is worth trying. In other words, we are not so much responsible for the final result, but we are indeed responsible for our effort.

Sustainable Development

According to The World Commission on Environment and Development (1987) *sustainable development is a development which satisfies the needs of the present without threatening the need of future generations to satisfy their*

own needs... In the widest sense, the strategy of sustainable development is concentrated on the attainment of harmony among human beings and between mankind and nature.

Josef Vavroušek (1993) thought that *sustainable development, or a sustainable way of living should make an effort to find the ideals of humanism and a harmony in the relationship between man and nature. It is a way of life which looks for a balance between the freedoms and rights of each individual and the individual's responsibilities towards other people and nature as a whole, including responsibility towards future generations.*

From the above-mentioned definitions it is clear that sustainable development does not aspire to become an all-encompassing vision, a new "religion", which would solve all the problems of the world and establish heaven on Earth. A sustainable way of life, above all, means:

A demand that everyone on Earth should be able to satisfy at least his/her basic needs. As basic needs, we can consider food, drinkable water, clothes, shelter and also the possibility of satisfying these needs in a dignified way, i.e. by working. But, we could also include here the right to a hygienically acceptable environment of man. At the same time, the understanding of basic needs should be extended to cover needs of a non-material character – i.e. relationships among people.

However particularly with material needs there is an essential problem – where is the limit of their satisfaction? When do we have enough? This was impossible even for once so ambitious communism to answer, even at the theoretical level: "To each according to his need, from each according to his ability." Is, however, a car a justifiable need? A yacht? A flight to the Moon? So far it seems that our desires, understood as needs (and these then as needs to which we have a right), far outstrip our ability to satisfy them. So we will have to change our attitude. Our needs could be satisfied only to the extent to which our planet, "a spaceship", from which at least in the near future there will be no escape, is capable.

A demand that even future generations of people could satisfy their needs and live dignified lives at least to the extent to which we can. This is a big challenge. Over the course of history more and more groups of inhabitants have gradually asserted their rights. Both slaves and serfs, then later black people and other "non-whites", asserted their rights against the whites; then democracy as majority rule appeared, but later, also on the contrary, the right of minorities vis à vis the majority, the rights of women etc. appeared. But these rights were always acknowledged after a clash,

under pressure, after a struggle which was led by violent or non-violent means. Maybe for the first time in history, we are now starting to think of the rights of the generations to come, those that cannot yet defend and assert themselves.

A demand for balance between the freedoms and rights of the individual and his responsibility. In the words of Josef Vavroušek: *Freedom of the individual does not end only where the freedom of another individual starts, but it ends also where the destruction of nature begins.* The last century was, among other things, characterised by liberalism. But if our freedom and our constantly increasing opportunities are not counterbalanced by responsibility and also by the ability to foretell the consequences of our actions, then we will inevitably cause suffering to ourselves and to nature.

A demand to respect the rights of other living beings. It is again a challenge which was not here in the past, or which we did not admit when "conquering" the world. We have three possible ways of reacting to this challenge:

- a) to continue to claim that "might is right", to conquer the world and assume the role of "master of all living creatures";
- b) to become a responsible custodian of the planet and, within the limits of the possible, to take care of organic and inorganic nature;
- c) to consider other beings as equal (a strictly bicentric view).

I personally prefer the second possibility. Even this "compromise", however, will put heavy demands on our behaviour, such as the strong limitation of the consumption of food derived from animals, in the long term maybe even conversion to vegetarianism.

A demand for harmony (or at least an approach to it) of relationships between man and organic and inorganic nature. The point is not an extremist demand for change in the regularities and natural function of ecosystems and nature, but a consistent accomplishment of the heritage of A. Schweitzer: a respect for life and nature. In this sense it is for instance, unacceptable to tolerate the gulf between the rich and the poor not only inside a single state, but between rich nations and poor nations.

A demand to learn from the future and the precautionary principle. In the past, our learning was based on the process of experimentation. It is high time to adopt anticipatory learning, i.e. learning based on anticipating the possible consequences of our actions. For instance, we are still not sure whether the threat of the greenhouse effect is real and the model calculation right. In spite of this we must act as if it were absolutely real. The consequences

of our making a mistake would be so far-reaching that they would threaten and maybe destroy the whole of civilisation.

In a similar way, we will have to relate the precautionary principle to the consumption of non-renewable resources, above all of fossil fuels. These were formed on Earth over tens of millions of years, and we can deplete them in the course of several decades in the most primitive way – by burning. In reality, they may one day be replaced by other sources of energy, but until that day comes, we must economise on fossil fuels in a sustainable way.

So, the transformation of society to a sustainable way of life means essential changes in its functioning. But is the vision of sustainable development applicable globally? I think it is. On one hand, as was said, it does not have the aspiration to become "a new religion" or in the worst possible case, an ideology that unites people and makes them happy, whether they want it or not. On the other hand, we believe that the principles of sustainable development correspond to "the law of naturalness". This law of naturalness is generally valid, and the English philosopher C.S. Lewis explains it in the following way: *The ancient philosophers used to speak about the law of "right" and "wrong" and called it "the law of naturalness". Its core was the idea that in the same way as solid bodies follow the law of Earth's gravitation or as organisms follow biological laws, also the being named man has his own law – of course with the essential difference that a solid body is subject to the law of gravity whether it wants to be or not, while man can keep or break the law of human naturalness according to his choice... I know, there are people who will object that the idea of the law of the naturalness of decent behaviour as something familiar to everyone is not well-founded because in various civilisations and at various periods of time there have been different moralities. This, however, is not true. The fact that their moral principles differ from each other never means a total difference. If somebody takes the trouble to compare the moral precepts for instance of the ancient Egyptians, Babylonians, Hindus, Chinese, Greeks and Romans, he will be surprised how similar they are to each other and how similar they are to our precepts. We can differ as to whom it is necessary for man to be unselfish – whether only to his family or to his compatriots or to everybody. But they always agree that they cannot put themselves first.*

Towards Global Governance

The weakness of the present rulers lies, not in their personal qualities, but in a consequence of the disintegration of the institutions on which power depends.

Alvin Toffler

I am convinced that in the present-day world, when our planet is for the first time in its history covered by a thin, but nevertheless global, skin of a single civilisation, to a certain extent we are all responsible for the world as a whole, and that not only can we not lie our way out of this responsibility, but we must not lie our way out of it.

Václav Havel

We live in extraordinary times. The 20th century is nearing its end and we are preparing to enter the third millennium. The 20th century was one of violence and anarchy – two world wars, communism, fascism, later the manifestations of ecological crisis, organised crime etc., but at the same time it was a century of marvellous scientific discoveries, of flights to the Moon. It was a period of emancipation and the granting of equal rights to people in many parts of the world. In the developed world a civic society is in the process of development, i.e. a society of citizens who are able and willing to take responsibility for the administration of common affairs into their own hands and to participate in the controlling, or self-controlling, of society.

A new quality is being born. We have discussed the vision of development for the 21st century – the vision of sustainable development, or a sustainable way of life in the first part of this article. We share the conviction that there lies before us another fundamental qualitative change – the transformation from a world order based on the strength of individual nation states to global governance.

Is however the transformation to global governance possible and realistic? Is it not only a dream? Is it not a waste of energy? No, it is not.

Concerning any act of initiative ... there is one elementary truth – numerous ideas and splendid plans were not realised because nobody knew about it: at the moment when we make an obligatory decision, even Providence will step out in our direction.

W. H. Murray

Great ideas appeared and were implemented at certain moments of change. These include e.g. the foundation of the United States of America, the abolition of slavery in the same country, the foundation of the United Nations Organisation after World War II, and the reconstruction of Europe through the Marshall Plan. It is necessary to have courage for great visions and to be prepared for them.

It is very important for the coming changes to happen in an evolutionary, not a revolutionary, way. The treachery of the revolutionary way was clearly expressed by Joseph Conrad:

In a real revolution, it is not the best ones who come into prominence. Violent revolution first comes under the control of fanatics and tyrannical hypocrites. Then it is the turn of arrogant intellectuals, who never get anywhere. They then become the leaders and heads (compare this with the example of Slobodan Milošević in Yugoslavia and Radovan Karadžić in Bosnia – note by P. N.). You must have noticed I have not mentioned mere rogues. At the beginning there can be high-principled and just, noble and faithful, unegoistic and intelligent people, but the movement slips out of their hands. They are not the leaders of the revolution. They are its victims: disgusted, disillusioned victims, often the victims of bad conscience. Grotesquely born hopes, caricatured ideals – thus is the success of the revolution defined.

To learn to be reasonable custodians of the Earth is our fate. This assumes global governance. For extra-terrestrials the division of the Earth into states would seem to have no sense. Astronauts usually have the same feeling when they can see our blue planet from outer space. Now we want to divide also the seas, oceans and the nearest reaches of space. A man with entrepreneurial spirit from San Francisco has even started to sell building sites on the Moon and Mars. It is said there is great interest in them. This is comic, but it says something about our way of thinking: to parcel out, own and exploit.

The problem with global governance is that the representatives of supranational organisations feel even less responsible towards the citizens than the politicians at local, regional or state levels. Then in the UN there is great corruption and ineffectiveness.

In the past, governance and law were nearly exclusively in the sphere of national interests. The system of nation states has functioned for about 400 years and it was, above all, a system for the balance of colonial powers. In the course of the last fifty years, there has been an artificial bipolar system, East – West.

Democracy was defined, above all, in the sense of the role of national government and regional self-government and the enforcement of the rule of law was perceived as the duty of national justice. This is not enough any more. Today, the most obvious trend is globalisation (the creation of a “global village”), which is accompanied by individualisation and the atomisation of society. Not even the United States of America is able today to check the

movement of its currency, and of course also ecological problems (the decline in ozone, the greenhouse effect, ecological refugees etc.) contribute to the necessity to find a solution at the global level.

Global governance is usually perceived as the relationship between governments. This, however, is not enough. Global governance must also include the activity of non-governmental organisations, civic movements, churches, supranational corporations, academic bodies and the mass media. Sovereignty is the foundation stone of present international relationships. However, considering the global commons, it is necessary to limit sovereignty or to apply it collectively. The most serious threats to national sovereignty and territorial integrity have today not external, but internal roots (tribalism in African states, tyrannical regimes etc.). Therefore it is necessary to adjust the understanding of sovereignty in such a way that the rights of individuals, of citizens, would be balanced against the rights of the state, and the interests of nations would be balanced against the interests of the global community.

The sociologist, Arnold Toynbee, stated that in the atomic age national sovereignty equals mass suicide. National or state sovereignty represents too often the narrow egocentrism of leaders, who protect mainly their own positions. We can confirm this observation with our own experience with the division of Czechoslovakia in 1992.

The recognition of the responsibility towards something higher than one's own country is difficult. The instinct to own territory is common to all animal species. However, with Man, the ability to recognise responsibility has gradually broadened in the course of history – it was a responsibility towards family, relatives, towards a community, later towards a country and now we are at the threshold of the recognition of our responsibility towards Mankind. The whole of history is evidently imprinted with our acceptance or rejection of responsibility towards the Creator. It is interesting that many futurologists agree that the 21st century will be a century of the search for a nearly lost spirituality.

To manage the acceptance of global responsibility and the resulting global governance, we will need a leadership which will be able to see beyond the next election period and also beyond the nearest state border.

We need a government which will be proactive not only reactive (reacting only to current events), which will be capable of innovative learning (learning from the scenarios of possible futures), not only learning from experience.

If individual states are going to fight for power, for primacy, when everybody considers the satisfaction of national interest, even at the expense of others, to be a main virtue, there will be no winners. All of us will lose and egoism will make an instrument of self-destruction out of the human spirit.

Global Marshall Plan

In view of the complexity of global problems and escalating tensions in the developing countries and between the developing and developed countries mutually, the situation seems to be desperate, even precarious. However, during the course of history there has appeared many times an idea which is ingenious in its simplicity, which, when it was realised, became a catalyst for positive far-reaching changes. The implementation of the *Marshall Plan* is an excellent example.

After World War II, Europe and Japan were in ruins. It would have taken them decades to extricate themselves from this situation by their own efforts. For that whole period, Europe and Japan would have been centres of instability and conflict. The United States, which was not strikingly affected by the war, decided to provide vast investments which made possible a quick reconstruction of the countries destroyed by the war. Thanks to the Marshall Plan, Europe have lived through more than fifty years without a war (disregarding the recent war in Yugoslavia). Nations which thrive are less likely to wage war because they have a great deal to lose by conflict. Those who are poor and in deadlock will be more inclined to accept a violent solution.

The Marshall Plan, which was known as *A Programme of European Revival*, shows how a grandiose vision can be successfully transformed into the shape of a particular activity.

The Plan concentrated on removing the obstacles which prevent the development of national economies – the revival of infrastructure and removal of trade barriers. It was long enough to contribute to a fundamental change in the orientation of development, it was not just one of many "development" programmes.

The former US senator and current vice-president, Al Gore, in his book *Earth in Balance* (1992), set forth the idea of a new, this time global, Marshall Plan which would help to solve the present, above all ecological, problems and mitigate the tension between the developed and developing countries. He assumes that the economically strongest states, above all again the USA, would be donor countries. However Europe, today stabilised

and strong, and Japan should participate as well. Al Gore does not believe in co-ordinated global efforts (global governance) when he insists:

Many supporters of common global efforts tend to consider the existence of a supranational authority to be inevitable. This idea, however, is not only politically impossible, but nearly impossible to realise. A political problem is evident: this idea causes such resistance that the aims themselves of our efforts stop being discussed. This is true especially in the USA, where they fanatically protect their individual freedoms. The administrative problems with such efforts would have to be gigantic.

Despite the above quotation, I am convinced that a reformed UN should be engaged in a global Marshall Plan, that a global Marshall Plan should be part of global governance. (Nor do I know why the institutions of global governance should be more dangerous for the individual freedoms of citizens than state institutions). This does not, of course, exclude the activity of nation states. On the contrary, it would be suitable for a global Marshall Plan to have more levels and to be co-ordinated. Part would be realised at the global level, where the source of income would be part of a future "global tax" (in the European Union the member states also return a part of their revenue into a common purse and from it then mainly the development of less developed regions of the European Union is supported). Part would be used at the national level, as is suggested by Al Gore, or at the supranational level (e.g. the European Union could prepare its own "Marshall Plan"). Part of a global Marshall Plan would be realised at the level of towns and villages (even today e.g. Sheffield in England finances a school education project in a partner region in Malawi), non-governmental organizations, or also churches etc. The decisive point will be whether the particular levels will be purposefully co-ordinated (not vertically and hierarchically to control, only horizontally to co-ordinate).

Now there is a good opportunity for a global Marshall Plan. On one hand, it would be a nice entry into a new century and millennium, on the other hand, after the victory of western democratic principles over communism, the acceptance of a global Marshall Plan has become realistic.

The great risk of a global Marshall Plan is that the countries which should participate in it are well-known for their great cultural, political and economic diversity, so the situation will not be as easy and clear as in democratic, and nearly culturally unified, Europe. In addition, it is necessary to take into consideration the existence of extra-state units, such as Kurdistan, Kashmir etc.

Briefly, Al Gore's specific proposal for a global Marshall Plan is as follows:

The world's effort to save the environment must be organised around strategic goals that simultaneously represent the most important changes and allow us to recognise, measure, and assess our progress toward making those changes. In my view, five strategic goals must direct and inform our efforts to save the global environment.

- 1. The stabilising of world population.*
- 2. The rapid creation and development of environmentally appropriate technologies.*
- 3. A comprehensive and ubiquitous change in the economic "rules of the road" by which we measure impact of our decisions on the environment.*
- 4. The negotiation and approval of a new generation of international agreements.*
- 5. The establishment of a cooperative plan for educating the world's citizens about our global environment.*

The plan should have as its more general, integrating goal the establishment, especially in the developing world - of social and political conditions most conducive to the emergence of sustainable societies - such as social justice; a commitment to human rights; adequate nutrition, health care, and shelter; high literacy rates; and greater political freedom, participation, and accountability.

In the 19th century the flow of British capital enabled the development of the United States. After World War II, a similar role in Europe was played, on the contrary, by the Marshall Plan. Now it is time for a new, global "Marshall Plan".

There are three preconditions which qualify the development in all the countries which a global Marshall Plan should concentrate on. These are education and skills (crafts), infrastructure (transport, telecommunications, etc.) and effective public administration (state authorities).

One of the main aims of a global Marshall Plan is to employ people, the most valuable resource of a country, especially in jobs beneficial to the public. In this way, among other things, there will be a strengthening of the ability of the market economy to create jobs and absorb labour.

Assistance to developing countries within a global Marshall Plan should be provided selectively, after their acceptance of the basic conditions of global governance (respect for democratic rules, the acceptance of the principles of a market economy, etc.) and with the precondition (obligation)

that these countries will operate as catalysts for assistance, and will be later willing to help others.

A global Marshall Plan would be orientated, above all, towards the moderation of the abyss-like differences between the North and the South. Former communist countries accepted, and still accept, limited development assistance. There is nothing wrong with this. After several decades of communist rule, whole regions have been devastated (above all ecologically), and in addition, our experience with "real socialism" might have warned and discouraged other, now rich and developed, countries from such an experiment. If there had not been the events in Hungary in 1956, if there had not been the events in Czechoslovakia in 1968, could e.g. France have become a communist country? Who knows?

Former socialist countries should, however, definitely build up their own resources and institutions for providing development assistance and co-operation. For a peasant from Somalia, the difference between the standards of living of a Czech and a German will be seen as completely unimportant, but the difference between his standard of living and that of a Czech or a German is enormous.

Why should the industrialized states help within a global Marshall Plan? Naturally because of simple human solidarity, and also in their own interests. The idea that we fortify ourselves behind a new iron or electronic curtain, that we create "a ghetto of the rich" and nobody will be allowed in and we will live satisfactorily is naive, wrong and dangerous.

Another reason is the fact that the industrialized countries colonized the rest of the world, they took from there the resources of energy and raw material (this is true to the present day) and cheap labour, they polluted the environment and destroyed the culture. There is now no sense in forcing the developing countries to follow the same path of development, the opposite is true. It would be fair to offer the developing countries education and developed technology (the UN could buy it from the developed countries through a global tax within the Marshall Plan) so that they could avoid the phase of primitive industrialization.

Another reason for assistance is to help in providing a feeling of self-confidence. Poor people and poor states usually take their poverty, even unconsciously, as their own fault. The inability to extricate themselves from poverty leads to frustration and this then leads to extremist feelings, aggression, violence and chaos. If we help them to succeed we will help them, above all, to regain a feeling of dignity and self-confidence, and those

who trust themselves are broad-minded and tolerant towards others, while those who have many complexes kick out at those around them. So one of the missions of a global Marshall Plan should be to help people and nations to regain self-respect and self-confidence. Dignity, self-respect and self-confidence are very important, and it is necessary to give people a chance to apply and develop these abilities.

If developing countries gain real access to education and high-quality technology, the strategy of development through a global Marshall Plan may be successful. In the past, art and culture were developed in tropical and subtropical regions – see the Great Rift Valley in Africa, which is the cradle of Mankind, or the Mediterranean, the cradle of our European civilization, but also e.g. the development of civilization in India 900–1000 years ago.

In more northern parts, we were engaged in a "fight" for survival with Nature. However, this disadvantage gradually changed into an advantage – we learnt to be hard-working, creative, efficient and we cultivated land and adapted it to our needs. Thanks to science and technology, we were able to master matter to a high degree, and this enabled us to go on developing. We should make these preconditions for creative work and "mastering matter" available to the countries of the South. We can rank here achievements such as air-conditioning, irrigation, or generally the transformation into a post-industrial stage of development.

A global Marshall Plan assumes vast investments. At the UN Conference on Environment and Development in 1992 in Rio, developing countries asked annually for \$125 billion, which is 0.35% of the World Gross Product, just for the implementation of Agenda 21 (an action plan for transformation to sustainable development). This demand was not fulfilled, but it would not even be a good thing to fulfill it without further preconditions. Such assistance, provided generally and without other conditions and control, is tempting and easy to misuse. The siphoning-off of capital, thanks to which rich elites have enormous financial sums in their accounts abroad, is a great problem in developing countries. Usually, this siphoning-off of capital increases proportionately to the assistance provided from abroad. Another problem is that half of the debts of developing countries are a consequence of the purchase of arms and military technology.

So, a global Marshall Plan has to enforce co-operation through contracts rather than assistance. One great idea comes from Tom Lovejoy from the Smithsonian Institution in Washington, D.C. – to exchange "debts for

Nature". Most of the countries are not able to pay back their debts, often not even their interest (30-50% of the total exports of some developing debtor countries is used to pay interest), so the outstanding debts are irrecoverable. The debts will not be forgotten, but a country in debt will promise in a contract that it will use the equivalent of the debt in its own currency to take care of Nature and the environment, primarily to save ecosystems of global importance. In Brazil this means, above all, the Amazonian forest. Its protection is in the vital interest of all the inhabitants of the planet and the Brazilians would do this service for themselves and also for us as a part of this agreement. This is logical because in Europe and North America we have cleared a large percentage of forest (in southern England there remains only seven per cent of the original area of forest) and developing countries sometimes object that we have no right to ask them to behave in a different way than we did in the past.

An exchange of debts for Nature is an example of a simple, but wonderful, idea which can help to solve the present strained relationship between the North and South. It is also much more dignified to conclude a contract than to be entirely dependent on gifts in the form of development assistance.

In developing regions, the payment of allowances (e.g. because of unemployment) should thus be conditioned by participation in jobs beneficial to the public. There could also be e.g. the planting of trees suitable for the regions considered. However, again it is important to complete the task, it is not enough to pay only the money for planting. At the moment of payment, the people will probably stop taking care of the trees, or they themselves will use them as firewood, so a contract has to be concluded on maintenance and treatment, and the main sum should be paid when the trees are able to survive independently, without attendance and protection by Man.

There are many other fields of co-operation suitable for a global Marshall Plan.

One of the possibilities is global negotiation on the limits of the emissions of carbon dioxide. Negotiations on emissions have started in the United States. For a certain region, there is defined a general maximum possible level of emission. Individual firms are given quotas whose sum exactly equals the maximum possible level of emission. The firms can negotiate with these quotas. A firm which decides to buy modern and clean technology can sell its share (or part of it) to another firm which is not able to fulfil the given limits, or it always has the possibility of selling its share to the state, which will buy it. So the state gradually buys these quotas and in addition, every

year it reduces slightly the maximum possible level of emission. Thus, the quality of the environment is improved and firms are forced to gradually introduce clean workshops and clean production. The others will go bankrupt.

Why not introduce something similar on a global scale? It is obvious that it would be very difficult to implement, but it would be just. States producing a great amount of carbon dioxide, or other (above all greenhouse) gases, would be forced to buy the quotas from a state (through the UN) which will not use its quotas. The point under consideration is not necessarily money, the developed countries as payment for their violation of the quotas could provide e.g. modern technology or know-how which would prevent developing countries from introducing dirty forms of production similar to those which existed in Europe and in America approximately from the beginning of the century up to the 1960s. There would be a great problem with the definition of global quotas e.g. for the production of carbon dioxide. However, it might be best to use the analogy of architects designing a bridge. Even they, according to the precautionary principle, will not design supporting pillars in such a way that they will be able to bear only the exactly assumed load. Rather they make the pillars capable of bearing a multiple load. Similarly we too, when unsure, should define annual maximum possible global emissions (e.g. of carbon dioxide) by expert estimation and then ensure them by a sufficient tightening up of this limit. When a bridge falls down it is a bad thing, but when we threaten the functioning of the biosphere it is much more serious.

We can continue this consideration and not only try to calculate the annual limits but also try to define the quotas from a historical point of view, let us say during the last fifty or a hundred years. We will find out that today the developed countries have used the bulk of this limit in comparison with the developing countries.

Let us assume that e.g. Great Britain has used 95% of its historical limit of CO₂, while e.g. Mozambique has used nearly nothing. So then, Great Britain should quickly stop the production of CO₂, which is impossible, or it should buy from Mozambique part of its historical limit for money, for technology, for know-how, for development projects, for planting forests which bind CO₂, etc. The question of negotiation with these limits would be co-ordinated at the level of global governance (and within a global Marshall Plan), in a similar way as in the United States, this negotiation is co-ordinated by the federal government or by individual states of the Union.

In a similar way, we could think of not only greenhouse gases, but also of the extraction of non-renewable sources of energy and raw materials and the production of waste.

Preferential attention within a global Marshall Plan should be paid to Africa – a continent whose position seems to be nearly hopeless. Here, it will be necessary to discover a new, so far unknown, attitude which will become the key to the development of Africa. Maybe the Republic of South Africa will become the motor for Southern and later also Central Africa, if it is able to cope successfully with the very difficult task of the transition from apartheid into a democratic society. Today, some farmers are leaving for neighbouring countries (e.g. for Mozambique or Angola) where they rent land. They, with their abilities, could become a catalyst for changes which at least would bring self-sufficiency in food to this region.

The Africans want a new system which would be in agreement with tradition, and this system is tribal organization. The attitude of the West does not satisfy the needs of tribes and rural communities. Therefore, a restructuring of the heritage of the colonial organization of Africa is necessary. The countryside is too often bled by the corruption of elites and by paying back debts to the state. There is no suitable technology for rural communities such as cooking stoves using solar panels. Therefore tribalism should be accepted as one of possible instruments of positive change in Africa.

The last example we will mention is Siberia. It is a region with enormous natural resources, almost inaccessible, which even the ambitious Soviet power did not manage to cope with (though it managed to seriously damage the Siberian ecosystems). Today, people live in poverty, without prospects. The factories for processing wood and fish are all closed down, deserted and deteriorating. Russia does not have and will not have in the near future, the investments for renewal, which would allow a dignified life for the peoples living here.

For multinational companies it is not a sufficiently lucrative place to invest. Crime, alcoholism and hopelessness are on the increase. Is this not a challenge for global governance and a global Marshall Plan, of course in co-operation with the Russian government? Siberian taiga and tundra are, like the Amazonian rain forest, ecosystems of global importance and within global governance there should exist the possibility of investing and employing people in certain, above all environmentally "friendly", projects.

Today, most of the nation states (including Russia) do not protect themselves against the entry and influence of multinational companies. On the contrary, they often lure them into a region and provide them with a tax holiday and other advantages. Why could there not be similar activity at the level of global control, through a Marshall Plan, if the projects are important for the whole planet?

The collapse of communism has caused the collapse of the bipolar world: communism – the enemy of the West – has disappeared. The release of resources (not only military ones) could create the preconditions for the new ambitious aims of the co-operation of people and nations on the threshold of the 21st century – a global Marshall Plan, global governance and sustainable development.

One of the great difficulties of a global Marshall Plan is that it will require a fundamental transformation, not only from developing, but also from developed economies. If the developed countries are not going to set an example, the developing world will not be willing to accept and introduce the necessary changes.

Europe today is again behind in its economic growth because of social gains which are inconceivable e.g. in Southeast Asia, and in addition a substantial part of its energy may be absorbed for a long time by the process of the unification and expansion of the European Union. It could, therefore, be more sensitive to the challenge for sustainable development and global governance. Otherwise there is the threat that Europe, or the whole developed world, will economically "dissolve" under the pressure of competition – cheap labour working in inhuman conditions in the developing or just industrializing (Southeast Asian) countries. Another alternative would be the closing-off of the markets and borders, but this is not good and, above all, impossible to implement. Therefore, the only solution will, most probably, be global governance and the new global Marshall Plan. This is reality both for developing and developed countries, this is reality also for former communist states, which created the so-called "second world" until recently.

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On the Verge of the Third Crossing

(Reflections on the meaning of evolution and the future of humanity)

by Josef Svoboda

Synopsis

The non-living world is agile in both its micro- and macrostructures, yet its restlessness, while strictly deterministic, seeks order. Physical reality, as we perceive it, is an outcome of the universal evolutionary process of self-organization. The vitalization of this originally inanimate world represents the first crossing or transgression, a stepping beyond the bounds of lifeless matter into a more autonomous, diverse and creative state of being.

The subsequent awakening of a selected group of living beings into consciousness, as we humans experience it, is again a cardinality phenomenon. It is a stepping out of the material world into a non-physical, intellectual and spiritual realm, and embodies the second crossing. This was a breakthrough into a domain governed by intellect and guided by ethical imperatives which have, lamentably, not always been respected. Even this insubordination appears to be a novel and rationally inexplicable happening in a universe otherwise compliant with law and order.

The higher intelligence of *Homo sapiens* has helped this complex, yet very young species in vanquishing its competitors. This superb and incomparable ability failed, however, to warn humans against the long-term consequences of their aggression. Until very recently, *Homo sapiens*, nevertheless, behaved as any other species, profiting from its evolutionary advantages after Darwin's rule of the survival of the fittest.

During the course of his rather short existence, this "enfant terrible" of evolution has brought about critical changes in the entire biosphere. Large forest, savanna and grassland ecosystems have been eliminated, and the anthropogenic eradication of species has been going on for centuries if not for millennia. Many more species are currently threatened, especially the evolutionary most advanced groups, the primates. After WWII the population of India was about 300 million. Roughly the same number of monkeys lived in her forests and groves. Fifty years later, the Indian population has exploded to almost a billion souls (projected date is May 11, 2000) while, mostly due to deforestation and animal trapping, the number of monkeys has declined to a few million.

The survival prospects of apes are even more dismal. Unquestionably, the on-going process of species extermination is reaching cataclysmic proportions and has already been labelled as a "sixth global extinction" (Leakey and Lewin 1995). If it continues, it might truly result in the only known global ecological calamity caused not by cosmic or other external forces but by a single species dominating the biosphere.

The long geological memory of the Earth has imprinted at least five major global disasters, yet the biosphere has always recovered from their effects. In fact, after each disaster, it has expanded into a greater diversity and heterogeneity of living assemblages. The best documented catastrophic event is associated with the extinction of dinosaurs at the end of Cretaceous period. The dominant evolutionary stream of the era, the great reptiles, perished following an asteroid's collision with the Earth. However, relatively soon after, life started to flourish along many evolutionary side branches. Will this historical experience repeat once again and the most advanced species perish during the ongoing "sixth extinction", as the great reptiles did before? If Mankind gets its act together and succeeds in establishing a new balance between itself and the biosphere, it may have a chance to continue. It could be evolving further, although more likely along a yet unknown, less biological path. In real terms, humanity would have to free itself from the ingrained hostility towards nature. This would be impossible without developing its ethical dimensions. In other words, humanity would have to arrive from the present crisis transformed and liberated from inherent aggressive predispositions – to be able to cross the threshold of the third crossing. Should this not happen, the outlook for human continuation on this planet is predictable.

Curiosity and Wonder – the Primeval Driving Forces of Human Advancement

*I know so little about the stars I have descended from.
Out of that amazing workshop and laboratory of happening
which lasts for thousands of thousand years – and will never cease...
I arose from the heavenly dust of weathered and crumbled stars
snowing through universe. Combing with the only "condition"
to gather the atoms in a protein pap of which a sway of life
will suddenly and unexplainably emerge.*

Out of this prime substance I arose, and so did the brother of my brother,
and grand-dad of my grandpa – in an unending line up to the first spark
which fertilized the restless atom...

I stand under the leaky tent of the universe,
eyes focussed at Orion and see what exists no more...

Whom may I lean against in this moment of dizziness...?

Does the universe need my ephemeral astonishment,
a testimony of a non-comprehending and its meaning non-grasping spectator
in an unfinished and unfinishable drama?

(Jaroslav Havelka, excerpts from his poem in Breviary of Wondering)

Only the human species is endowed with the capacity for wondering and unweiling, with the awe of life and search for its meaning. Great minds have tried to shed light on the mysteries of the world and human existence. Every thinking being craves reassuring answers to these vital questions.

Cosmic dimensions of evolution. Swimme and Berry (1992) see evolution as an unfolding drama from the primordial flaring at the dawn of the universe's beginning – to the eozoic era culminating in human civilizations. And it may not end there! This universal drama is an exciting happening, a reason for admiration and a cause for celebration.

In the non-living universe atoms aggregate into molecules and more complex macro-structures. In living matter, cells, the primary carriers of life, converge in multicellular organisms with specialized organs and tissues. These "higher" organisms have further differentiated in order to adapt to a myriad of ecological niches. Over millennia, complex assemblages of species and their populations organized themselves within a certain space. Within these multi-specific communities, which constitute synusia, ecosystems and especially biomes, there is minimal adversity and maximal compatibility. Endless interactions among the populations and with the surrounding milieu have resulted in a powerful evolutionary drive. This translated into a realization of all conceivable functional potentialities (i.e. emergence of a new species). Over eons of time this driving force resulted in a hierarchical pyramid of living forms, functions and energy levels as it exists today.

In a short time, relatively speaking, the life forms separated into the autotrophic and heterotrophic branches. To put it simply, they diverged into

the realm of green (photosynthetic) plants and the realm of animals and microbes, which are directly or indirectly dependent on plants. Powered by light energy, plants manufacture their own food out of inorganic compounds and are themselves food for the heterotrophic organisms. The evolutionary structuralization of life forms has continued throughout the ages in spite of (and paradoxically, in part, because of) the numerous geo-historical catastrophes up to the arrival of Man. As any other animal species, *Homo sapiens* is biologically defined and pre-determined by what has been encoded in its hereditary matter by the long line of its ancestors.

Human's social arrangement is much more complex in comparison with any other species and represents a novel phenomenon in the evolutionary history. Humans are the only animal species which form populations with a large number of diverse niches at one place and in one time period.

Hierarchical structure of reality. Our enlivened planet Earth is characterized by four tiers or "spheres" of organization. These are 1. The minerosphere, the body of our planet with 92 elements, of which only a small number participate in the biological processes. However, the non-participating elements are important for their proportional representation and determine the mass-to-volume ratio of the planet. Its distance from the sun creates favourable thermal and light energy conditions for the emergence, development and sustenance of life. 2. The biosphere, the thin skin of living organisms adapted to aquatic and terrestrial life. 3. The homosphere, defined by the presence and influence of Man on the planet and far beyond, and lastly, 4. The noosphere, the intellectual connections and communications among the humans occupying the homosphere.

These spheres emerged gradually in geo-historical time. The genesis of each higher sphere epitomizes a "quantum leap", a qualitative difference in comparison with the previous state of organization. Something new was born while all previous essentials, including subordination to physical and biological laws, were preserved. So the biosphere is determined by the minerosphere and grafted upon it, the homosphere conditioned by the biological processes and dependent on them, and the noosphere circumscribed by the intellectual capabilities and emotional capacities of humans.

As a mammal, *H. sapiens* continues to be preserved and controlled by mammalian biology. We are further immersed in the supporting milieu of the biosphere and minerosphere which protect and nourish us as a placenta does the foetus. This predetermines our ecology. We cannot exist in a vacuum.

Even in space, astronauts must carry a tiny bubble of the biosphere with them.

Still, humans differ from all other creatures. Only our species has crossed the fateful threshold into consciousness. This transition must have been relatively sudden, since the theorists of evolution speak about the "emergence of consciousness" (Calvin, 1990). Human minds meet and mutually communicate at increasing intensity and speed in the noosphere (Teilhard de Chardin 1969). Positive feedback is triggered: the mind influences the body ("mind over matter").

Early humans soon began to differ from the cousins they left aside – by reshaping their body (larger cranial capacity, upright stance, body hairlessness), as well as behaviourally. Acquired rationality proved to be a commanding evolutionary advantage, increasing their evolutionary fitness significantly. In time, however, they started to upset the ecological balance, first on a local and regional scale (cf Pleistocene overkills), and ultimately in the entire biosphere.

In the course of their relatively short existence, humans have caused the extinction of thousands of species. Their more aggressive or cunning bands eliminated the weaker or meeker ones of their own kind, in fierce intraspecific competition. (This practice is still going on. It is called war or genocide).

At present the conflict between the human race and the biosphere is reaching a state of impasse. Environmentalists and politicians with foresight, supported by a growing segment of the citizenry, are at work on restoring the balance between humanity and nature. Sadly, smaller but powerful lobbies resist any radical change. Reconciliation of humanity with nature, inevitable for our own survival, must be of a new quality. Since the conflict is fundamental, it cannot be resolved without the formulation of a new *modus vivendi*, or even better, of a *concordat* between Man and creatures with which we share and cohabit this planet. Nature, of course, can never be an active participant at the negotiating table and so, all the adjustments and fair dealing must come from the human side. If we, as humans, consider ourselves distinct and more advanced than the rest of the living creatures, we must become even more distinct and advanced to be able to break a viable deal which might be acceptable to both sides.

Evolution tends to progress from simple to more complex forms and from rudimentary to more developed ones. It is not a random process as avalanches or wind-stirred waves are. It makes sense. If we observe the compass needle we conclude correctly that there is a remote magnetic pole

with which the needle is in mutual attraction and towards which it orients itself. The hypothetical pole of evolutionary orientation has become an object of interest of evolutionary theorists in the past (du Nouy 1947) and more so at present (Kauffman 1995). Based on many symptoms (to be outlined later), we are convinced that in advanced humanity the evolutionary trajectory is approaching another breakthrough threshold, the third transgression.

Our understanding of reality is also evolving. In the not too remote past, people were convinced that the Earth was the centre of the universe and that Man, had been created by a special and instant act of God. Modern science has offered us new and credible information about the origin of the universe, about the evolution of life and about the gradual emergence of Man on Earth. We are also learning more about the cultural evolution, or revolution, to cite Bronowski (1976). All these findings are stunningly different from the beliefs of the past. Currently, the scientific and technological progress is bringing about an information overload, which like a sonic boom is hitting us with a deafening blow. It's no wonder that a pervasive uncertainty is starting to prevail, and the entire global village of humanity is in a danger of a psycho-sociological shock (Toffler 1971).

In this communications pandemonium the majority of us are hardly able to deal even with events of the present moment. A concentrated effort is needed to extricate and disengage from the all-penetrating barrage of information and disinformation. For a while the mind suffers painful withdrawal symptoms but when we persevere, the obtrusive noise fades away and the habitually fogged horizons clear up. The surrounding reality, and our position in it assume new relationships. The mind is able to discern, choose and respond freely again.

It would be hard to find a reputable scholar of natural sciences today who would deny that living nature evolved into the present spectrum of forms and functions from more simple ones. The paleontological record, deposited in the geological column as in a historical book, is, in this respect, quite convincing. There is also little doubt about the proposition that all living organisms are closer or more remote relatives of each other and represent one extended family (Dawkins 1991). With chimpanzees our closest surviving kin we share 98.4 % of our DNA (Diamond 1992).

Yet, if someone were to attempt to formally accuse nature of a 'misdeemeanour of evolution', he or she would have a hard time to convince the court and win the case. That's because a mere time-sequence from less

to more complex doesn't inevitably establish that the simple was the ancestor of the complex. In other words, the correlation between the phenomena does not necessarily constitute a causal connection. The defendant would probably be acquitted for insufficient evidence.

In legal cases where clear and direct proof is absent, advanced societies developed a justice system which includes the concept of a jury. The jury panel is the modern equivalent of Plate's washing his hands over an unconvincing accusation. There is plenty of evidence that even unanimous decisions of twelve jury members do not guarantee that truth and fairness are served. Miscarriages of justice have and will occur relatively frequently. Nevertheless, the jury is a valuable and irreplaceable instrument of the imperfect justice system, where a verdict must be reached even on the basis of indirect evidence.

When we acknowledge that an overwhelming majority of biologists and other natural science theorists are absolutely convinced that evolution has taken place, we are in essence relying upon the agreement of a scientific jury. It is, therefore, very probable that the judgement of this jury gives us a close approximation of the past biological facts and events. Gould (1987) commented on the degree of scientific confidence in evolution: *The fact of evolution is as well established as anything in science (as secure as the revolution of the earth about the sun), though absolute certainty has no place in our lexicon...*

In contrast, no scientific authority exists which would explain with incontestable clarity the mechanism of evolution – although outstanding theories have been forwarded and are being taught at universities. The same jury panel would, therefore, be unable to reach unanimity on the question of how evolution takes place, even less of where it is aiming, or what is its meaning. Is it a spontaneous process, nourished by randomly occurring mutations and controlled by natural selection? (Dawkins 1991, Dennett 1996). Or has evolution been preprogrammed? Has its realization of life from the simplest to the most advanced forms been predetermined? What role has been assigned to humanity in the grand scheme of things? Kauffman (1995) vehemently argues that Man has been an 'expected' product of evolution. The emergence and diversification of life, more so of intelligent life, are the giddy realities which fascinate and overwhelm us.

The emergence of life

Our next question concerns the emergence of life itself. Until very recently, there was no indication that life could exist on any other of the nine planets of our solar system, much less elsewhere in the universe. Recently, however, NASA organized a press conference at which experts from various disciplines made the sensational announcement that a very primitive form of life existed on Mars in the past. The NASA's *habeas corpus* was a pebble-size meteorite found on the surface of the Antarctic ice sheet. The experts on celestial fragments assured the audience that the particular meteorite originated from Mars, dislodged and ejected into space by a collision of an asteroid with the red planet. This piece of rock harboured imprints of minute rod-like features, believed to be a chain of single cell organisms, alive long ago when conditions on Mars were still favourable for the existence of life (Jaroff, 1966; Goldsmith, 1997). It is, however, one thing to find possible traces of life, albeit already extinct; it is quite another to find out how life came into existence.

Davies (1999) offers several scenarios how life could have come into existence and how it could originate on Earth. However, at the present state of knowledge, if someone dared to declare that they had resolved how life on this planet began, they would immediately become suspect (Kauffman, 1995, Schroeder 1998). The case of the "cold fusion" discoverers' still lingers in memory. The evidence merely shows that life on Earth began some 3.8 billion years ago, and that it was initially very simple in comparison with the organisms of the present macro-world.

Even in questions concerned with the origin of life there is no shortage of interesting theories, supported by the outstanding experiments of Stanley Miller performed in 1952, and his followers (Margulis 1981). Miller, at that time still a graduate student of professor Harold Urey, filled a glass flask with a mixture of water, methane, carbon dioxide and several other inorganic compounds, and subjected the mixture to electric discharges. After days of bombardment with this artificial lightning, Miller analysed the contents of the flask and discovered a small inventory of amino acids, the building blocks of proteins. In 1950' this was a great accomplishment, showing a promising road to further research on the origin of life. However, how long this road will be can only be crudely illustrated with the following analogy.

A single protein molecule could be represented by a large oriental rug in which an amino acid molecule (such as those which appeared in Miller's flask) would represent a single knot. If the simplest cell could be compared

to a warehouse, all the Oriental rugs presently in stock from Turkey to Japan would fill only a tiny corner of its space. In a living cell there are tens of thousands of protein "rugs", each with delicately crafted and very specific patterns, all perfectly organized in many structurally and functionally different organelles. As Behe (1996) pointed out, no one has been able, so far, to explain, rather sudden emergence of this complexity, without which even the simplest cell could not function, much less replicate.

Oparin's theory of coacervates, tiny protein droplets coated by polysaccharides, still has its followers (Davies 1999). These micro-modules are able to exist in a solution of more simple compounds, and even swap certain molecules with the solution, imitating metabolic processes. It is difficult to reconcile Oparin's premise with the astronomical improbability that coacervates emerged from a random conglomeration of atoms in primeval oceans. And yet, coacervates are still light years away in complexity from the most primitive living cell.

The 1996 Nobel prize for chemistry was awarded to an American, Robert Curl, and an Englishman, Harry Kroto for the discovery of fullerenes. These are complex organic molecules with carbon atoms connected in a shape similar to the geodesic dome of Buckminster Fuller, which was exhibited at Expo 1967 in Montreal. These molecules, nicknamed "buckyballs", might have something in common with Oparin's coacervates and therefore, may also relate to the emergence of life. It would be interesting to follow the advancement of fullerene chemistry to see its potential impact on the theories of the origin of life.

After forty years of fruitless experimentation which followed Miller's discovery, contemporary cellular biology moved Miller's flask onto a back-burner. Instead, researchers are choosing a more pragmatic approach, to remove, add, replace and manipulate various organelles and genes in order to modify cells for an intended purpose (e.g. use of a genetically altered animal tissue for human transplants). It would not be surprising if in a not too distant future some avant-garde cellular engineering team announced that they have succeeded in assembling a living cell completely out of spare parts. Would this confirm the spontaneity of the emergence of life? Hardly! This living cell would be reassembled by intelligent beings out of parts pre-formed by living organisms. The process would have required long study and experimentation, and the help of sophisticated technology. None of this was available in the primeval oceans where life is thought to have originated.

How life on Earth began we know not, but this lack of knowledge should not discourage us from further reflections. Life does exist, and in countless forms and variants. We can assert unequivocally that at the beginning life forms were much simpler than they are at present. It is also highly probable, objectively almost certain, that present-day life on Earth evolved from these ancient forms. We are all mutually connected in our evolutionary roots.

The Cambrian explosion of life-forms. For longer than three and half billion years, i.e. 85 % of the duration of life on Earth, oceans and water bodies were inhabited solely by bacteria, primitive algae and eventually by simple multicellular organisms. However, the onset of Cambrian era (supposedly exactly 543 Mil. y. ago; Nash, 1995) was marked by an unprecedented evolutionary expansion. In the astonishingly brief period of a few million years, the geological strata became rich with numerous groups of already well differentiated organisms. These have been classified into more than a hundred main taxonomical groups, the Phyla, of which only about a third, 32 to be exact, have stabilized and continued until the present (Kauffman 1995). The enduring Phyla branched into Classes, Orders, Families and Genera. Countless species at the end of branches represent the "foliage" of the Phylum tree. However, leaves are impermanent organs. Eventually they fall off, or are torn away. Branches of the Genera, Families, and even stronger branches of Orders and Classes live longer. The most enduring, however, proved to be the trunk, the evolutionary Phylum. This evolutionary "Big bang" cannot be explained. Life on Earth entered a new progressive evolutionary phase.

In contrast to the exceedingly long, and in terms of evolutionary progress rather dull pre-Cambrian epoch, the much shorter post-Cambrian era is characterized by a bumpy ride due to several known cataclysmic events. In addition, organisms were subjected to many less sudden and dramatic but in their selective pressure equally forceful periods. Yet while many of the simple forms prevailed, advancement of the structure and function of selected groups of organisms continued. The process was exponential, and eventually led up to emergence of the species *Homo sapiens*. Will it continue beyond?

The "how" question of evolution

How evolution works is an extremely interesting problem, the solution of which is central to the understanding of the preservation of life, its direction and meaning. The following is an outline of beliefs, hypotheses and theories relating to life diversification and the mechanism of its expansion.

Creationism. One of the oldest exegeses – and that not only of the creation and proliferation of living organisms but also of the Earth and the entire universe – is certainly the Book of Beginnings, Genesis (1:1-31). The drama of the gradual rise into existence is painted here with bold Michelangelo-like strokes on six broad canvasses representing symbolic days (epochs) of the acts of creation. The Genesis narrative vividly articulates...

That "In the beginning God created the heavens and the Earth", which was "a formless void ...". The second day he illuminated the Earth. On the third day he separated the dry land from the oceans, and commanded the Earth to produce vegetation with seed- and fruit-bearing plants. On the fifth day he created animals, and, finally, on the sixth day God created human beings in his own image. At the end of the sixth day he praises his entire opus: "God saw all he had made, and indeed it was very good" ...

The seventh day God rests. He has completed his work. God blessed the seventh day and made it holy. Shortly after he hands his creation over to Man with prophetic words: "Be fruitful, multiply, fill the Earth and conquer it."

For millennia, this scenario of creation was accepted word for word. Even today, the biblical story of creation is taken literally by certain fundamentalist religions. I remember an anecdote a friend and colleague told me: *One day, his old aunt was listening to a minister preaching about the prophet Jonah who according to the Bible was swallowed by a whale. Jonah survived the ordeal in the whale's stomach praying to Yahweh, his God, until the whale disgorged him three days later. The preacher tried to interpret the event in symbolic terms but did not succeed. The aunt stood up and said: "If the Bible says that Jonah lived for three days in the stomach of a whale, I believe it. And if it were written that the whale lived in the stomach of Jonah, I would believe that too".* Clearly, this is a case of faith moving mountains!

The overwhelming majority of modern theologians accepts, or at least theoretically admits that organisms evolved in time. Recently the Pope declared that an evolutionary interpretation of the act of creation is compatible with the Christian faith, as long as God's primary authorship is not denied (John-Paul II, 1996).

Darwin and his fore-runners. It is no surprise that evolution, the new unorthodox theory about the origin of species – Man included – caused such a heated reaction. The author of the intellectual flurry was an inconspicuous, yet incredibly observant and well-travelled Anglican pastor named Charles Robert Darwin (1809–1882).

Darwin was not the first to express the notion that plants and animals change in the course of time. Even his grandfather Erasmus Darwin had written an essay on evolution. Furthermore, concurrently and independently from Darwin, Alfred Russel Wallace (1823–1913) preoccupied himself with the idea and mechanism of natural selection. In 1858, both authors jointly published a treatise on natural selection in the Journal of the Linnean Society (Darwin and Leakey, 1986). The era was rife with ideas of change and evolution.

Already in 1809 (when Darwin was born) the French naturalist Jean Baptiste de Lamarck (1744–1829) had published a book, "Philosophie zoologique", in which he presented his ideas about the transformation of living organisms. Lamarck believed that organisms adapt to their environment and that the acquired adaptation becomes hereditary. He even suggested that they have an "intrinsic urge" (French "besoin") to evolve into better-adapted forms. The well-known example of Lamarckian reasoning is the long neck of the Giraffe, ostensibly a result of the animal's repeated stretching to reach the foliage of tall trees. In modern terminology, this would be a change in the phenotype producing a change in genotype.

It is intriguing that in this point Darwin did not differ much from Lamarck. True, Darwin did not use the term "urge or need" to change, but the more pragmatic "usage or non-usage" of an organ or a faculty as driving factors in evolution. A contemporary slogan of the time was: use it or lose it! Consequently, even for Darwin the road to the genotype led through the phenotype. Of course, nothing was known about genes and genotypes as yet.

It was first the German biologist August Weismann (1834–1914) who produced the evidence that so called "germ plasm" (now described as DNA) is passed from generation to generation without change. This germ plasm was seen as inert and unchanged by nourishment, training or learning (Darwin and Leakey, 1986).

Although there were other thinkers, prior to or contemporary to Darwin who wrote about the concept and mechanism of evolution, it was Darwin who worked out these ideas as a comprehensive theory and also applied it to the human species. Charles Darwin thus epitomizes for evolutionary biology what Gregor Mendel personifies for genetics and Albert Einstein represents for modern physics.

Darwin's ideas shook the philosophical and socio-political foundations of 19th century society. Darwinism was adopted as an official doctrine and a "scientific" foundation of Marx' and Engels' philosophical materialism.

Ultimately, Darwin's evolutionary theory had a cardinal influence on the secularization of modern thought and lifestyles.

Darwin's ideas about the evolution of species were considerably different from the present day interpretations of its mechanism. He did not know about Mendel, the discoverer of the laws of heredity, nor about genes, and less about mutations, which are the driving monads of modern neodarwinism (Darwin and Leakey, 1986). For Darwin and Wallace, evolution was directed by the "natural selection of fitter populations". About the perpetuation of acquired characteristics, Darwin believed that individuals of the same species are changeable in all characters. Emerging deviations would survive or perish in the struggle for existence and only the successful ones would establish in the next generation.

An important aspect of Darwin's concept of evolution is gradualism. Organisms evolve slowly. Evolution does not occur in leaps (*Natura non facit saltu*). In his book "On the Origin of Species" he wrote: *If it could be demonstrated that any complex organ existed which could not possibly be formed by numerous successive slight modifications, my theory would absolutely break down* (cited from Dawkins, 1991).

Neodarwinism. Organisms do change, if not by leaps then through infinitesimal steps, the genetic mutations. These changes might show up as advantageous, and would therefore proliferate through subsequent generations. More often, however, they prove to be detrimental and individuals carrying the altered gene usually perish in the process of natural selection. Mutations happen suddenly through unpredictable modifications in the gene code, the genotype. They are permanent and may become hereditary if the offspring survive. They reveal themselves in subsequent generations as changes in the organisms' appearance and behaviour, i.e. in their phenotype. In modern terminology we would speak about discrete and digital, not continuous or analog changes. Like a sequence of picture-frames in a time-lapse film. After a series of what appears to be identical frames, there emerges a frame with a slightly modified picture.

The ancient Greeks perceived the heavenly display of stars as a harmonious scheme of spheres and called it "cosmos", full of beauty. The astronomers of the modern era see in the predictable motion of celestial bodies a precision timepiece. For neodarwinists, living organisms, such as a pine tree or a bee, are skillfully arranged mechanisms. However, they derisively add that the "watchmaker" who constructed these mechanisms is blind. He not only does not see, he does not even realize that he is working. Although blind, he

could still be visible or tangible but he is hiding. In fact, he is only a sardonic hypothetical postulate, Dawkin's (1991) fictitious anti-creationist metaphor. An alias for the blind forces of nature. Johnson (1995) put the blind watchmaker on trial: *in the last analysis, Darwinism is not really based on empirical evidence. Its true basis is in philosophy...*

No wonder Darwin's followers have been confronted with a determined opposition from theologians as well as some biologists, much as Darwin had been in his own time. The axiomatic postulate that the driving force behind all evolution was random, spontaneously occurring mutations, sorted out by natural selection has become the weak point of the neodarwinists' theory. Kauffman (1995) suggested that the likelihood of spontaneous, non-directional, micro-incremental changes resulting in modified populations and different species is minuscule. The probability that these changes would further combine to produce new genera, families, classes and orders in the time-scale available, is astronomically small.

New experiments seem to suggest that in a stressful situation bacterial populations generate beneficial mutations more often than detrimental. If proven correct, this finding would violate the central principle of Darwinian genetics, that the occurrence of mutations is random and unconditionally nondirectional. The discovered phenomenon is crucial for explanation of the evolutionary mechanism. It is under intense investigation and the question is long overdue. Since Darwin *there has been an overemphasis on the power of selection as opposed to the generation of diversity* (Beardsley 1997).

Until quite recently it was taught that evolution, from the simplest protists at the beginning of the biological era to the most advanced primates at present, was a long process, more accurately over 3.8 billion years long. It was also assumed that the process was more or less smooth and continuous. It has also become clear that since the 'Cambrian explosion' (i.e. during the last 500 mil. years), the complexity of organisms has been increasing exponentially. However, systematic studies of the geological strata and their fossil record convincingly point to anything but a smooth and uninterrupted evolution.

Catastrophism. It is most amazing that since the beginning of life the temperature in the biotic shell of our planet never rose so high or sunk so deep as to kill all the organisms that had already developed. Similarly, other supporting conditions, such as a favourable composition of the atmosphere, remained within the limits tolerant to life as a whole. However, within these margins, catastrophic events did occur. Some of them caused such damage

that few species survived. Was the clock of evolution set back by millions of years by these events? Curiously not. In fact, the exact opposite ensued. After each catastrophe, the surviving life forms burst out with renewed force, and produced ever more diverse and advanced forms (Lewin 1994).

Catastrophism and the associated idea of extinction are older than the concept of evolution itself. It had been already introduced at the end of the 18th century by the French naturalist and founder of scientific palaeontology, George Cuvier (1769-1832). This gentleman recognized that at the end of any of the great geological periods, palaeontological records of the great majority of organisms, characteristic for that period, also end. In fact, the extinction defines the end of the period. The author correctly interpreted this mass extinction as a result of some kind of great natural catastrophe. He was convinced, however, that all life became extinct during the catastrophe and that it emerged again *de novo*.

Cuvier's hypothesis was soon criticized by the English geologist Charles Lyell (1797-1875). In his 3-volume *Principles of Geology*, published in 1830, Lyell vehemently, yet wrongly, opposed the existence of catastrophic events in Earth's history, and thus opened the door for Darwin's ideas about the uninterrupted evolution of organisms.

To date, geologists and palaeontologists have identified five greater (and a series of lesser) catastrophes which suddenly terminated the following geological periods: at the end of 1. Ordovician (440 mil y. ago), 2. Devonian (365 mil y. ago), 3. Permian (225 mil y. ago), 4. Triassic (210 mil y. ago) and 5. Cretaceous (65 mil y. ago).

For instance, during the Permian catastrophe, up to 96 percent of species were wiped out. Numerous genera and families, several orders and one class of organisms were afflicted. No catastrophe, however, caused complete extinction of any Phyla (Kauffman, 1995).

There is a growing evidence that less catastrophic, though significant extinctions occur approximately every 26 mil. years (Leakey and Lewin, 1995). Several sudden extinctions took place after the strike of a meteorite with a diameter of only a few kilometres. Such an uninvited guest arrives with unimaginable kinetic energy. The impact blows up a giant crater, causes a continental earthquake and produces a glowing pressure wave which may envelope the entire planet. Martian meteorites collected on ice sheets of Antarctica are proof of the force of such collisions. They are so powerful that they may result in the ejection of rock fragments into open space (Goldsmith, 1997). Discharged particulate matter hovers in the

atmosphere for months, even years, obscuring the sun. The planet cools down (an analogue of nuclear winter!) and photosynthesis may come to a halt. Many organisms which are fortunate enough to survive the impact succumb to cold and starvation. It is wonderful chance that, so far, life on this planet has been spared complete destruction, yet this is by no means a guarantee for the future.

As could be therefore imagined, evolution is not an idyll. Even Darwin said that it is a struggle. The Blind Watchmaker, it seems, is an extravagant master. He uses the 'trial and error' method and does not care how long it takes to complete the work. He ceaselessly creates new living forms and shortly afterwards he discards most of them. He never repeats what he has already tried. The development of new prototypes is more attractive to him than maintenance of a well-structured and functional ecosphere. What a strange strategy, and what a malicious treatment of his own creation! In cold blood the Blind Watchmaker destroys in a blink of eye what he has painstakingly fashioned over millennia. Each new evolutionary variant is only an elaborate drawing in a sifting sand, a mandala of his Zen garden, quite arbitrarily placed on this planet.

Punctualism. Thus the evolution of organisms was far from being a ceaseless and unbroken process as Darwin perceived it 150 years ago. However, it took some 150 years before two evolutionary theorists, Eldredge and Gould, finally took the reality of geo-biological catastrophes into account, and in 1972 formulated a new version of the evolutionary process. They called it the theory of punctuated equilibria, now known as punctualism.

These authors proposed that evolution advances in sudden flairs, fits and surges. Each catastrophic event is followed by a relatively fast and prolific speciation which branches from the surviving forms into the emptied ecological niches. When, in time, these are filled, the process slows down. Organisms of the various ecosystems have self-organized into new dynamic equilibrium where each habitat is populated and each niche utilized. There is little new progress and the system winds down almost to a halt. The authors called this phase of relative stagnation a "stasis". The newly established balance of the well-organized large ecosystems, the biomes (fine-tuned to regional or zonal climates), is sustained by a powerful inertia and idleness resisting any major change. Only micro-modifications are still successful, those which are splitting the already utilized niches and forcing the system to even more narrow specialization.

So the ancient catastrophes had been interpreted as unfortunate and devastating events which terminated the evolutionary achievements of the living universe of a particular era. Unquestionably, they were extremely destructive. Yet, now we can see that, incomprehensibly, from an evolutionary perspective they were also essential house-clearing events, opening new space for the "blind" grand-designer, the *felix culpa* of the forces of destruction.

Thus Darwin was complemented by Eldredge and Gould but not substituted. Dawkins (1991) is right when he suggests that while the punctualists do not admit it, they still uphold the concept of spontaneous mutations. They only dispute Darwin's gradualism.

The recognition that evolution would not and could not progress without periodic devastations is one of the most remarkable, significant and mysterious discoveries of modern science. Two seemingly antithetical agents have been essential in advancing the evolutionary process: the constructive self-organizing ability of life and the random destructive forces from within the universe. Together they allow free realization of potentialities in the limited space and time continuum of our planet. The mythical Phoenix rises renewed again and again from the ashes.

Extinction of the dinosaurs. The most notorious, and best corroborated natural catastrophe was the one which brought about the demise of the dinosaurs. It happened relatively recently, only 65 million years ago. In 1980, Luis Alvarez, the Nobel prize winner in physics, reported that he had analysed a thin stratigraphic layer at the K/T boundary which separates the Cretaceous period from the Tertiary. Alvarez discovered that the fine material scraped from this layer contained elevated levels of iridium. This element is rare in the Earth's upper crust but abundant in meteorites. From the concentration of iridium Alvarez calculated that the asteroid which evaporated during its collision with the Earth was about the size of Mt. Everest. Today even the point of its impact is known. It is the Chicxulub crater at the coast of Yucatan Peninsula in Mexico (Alvarez et al. 1980, Kyte 1998).

Dust ejected into the atmosphere by this cosmic superbomb obscured the sun. Those not killed by the fireball and pressure wave of the collision died due to the cold and starvation that followed. Most affected were the big reptiles whose era abruptly and definitely ended (Alvarez 1997). It would have taken many months before the dust settled and the sky cleared up. The

only survivors from the higher animals were some small reptiles, birds and early mammals. They all began to re-populate the devastated landscape.

As mentioned previously, with the destruction of the previous order an opportunity arises for every surviving species. Mutants which had a low chance to propagate in the former, well-tuned ecosystems, suddenly get a green light. They advance with a charge. In the ensuing fiercely competitive chaos, or more accurately, during the transition to a novel ecosystem arrangement, evolution proceeds in leaps and bounds (Kauffman 1995). Like running waters under melting ice-sheets it carves a new evolutionary topography and soon it reaches new unparalleled plateaus.

If the Yucatan Peninsula meteorite had missed the Earth 65 mil. years ago, the dinosaurs might still roam through the continents. There would be little for us to discuss since no human discussants would be here. But *Deus ex machina* intervened and the cosmic collision did take place, eradicating the great reptiles. Among the puny creatures which emerged from underground, following the celestial fireball, was an early primate, now called *Purgatorius*. Since that moment, primate evolution has advanced very quickly:

55 mil. y. ago Lemurs and Lorises emerged; 45 mil. y. ago Monkeys; 35 mil. y. ago Apes; 15 mil. y. ago *Ramapithecus*; 4 mil. y. ago *Australopithecus*; 1 mil. y. ago *Homo erectus* and some 1/4 mil. y. ago *Homo sapiens* emerged, i.e. present human beings.

This is an amazing exponential trajectory, an arrow of evolution released almost vertically towards the sky. The reality of our existence was described by Gould (1989) as "a wildly improbable evolutionary event". Improbable? From the randomness vantage point quite certainly. However, what if our existence was planned? What if, from the beginning, humans were "expected" as Kauffman (1995) tries to convince us?

Self-organization of non-living matter. The process of self-organization started at the moment of the Big Bang. Pure energy – possibly released from a latent source, possibly realized *de novo* from the void – began to "materialize", first into subatomic specks, soon after into protons and simple atoms, and ultimately into the open-ended series of 92 plus elements, as modern physics has identified or created. This process has continued further at a superstructural level. At a macro-scale it is seen by us as an expanding universe of millions of galaxies, saturated with billions of stars, many certainly endowed with planetary systems. In cooler environments, various atoms joined into molecules, obedient of strict rules of conduct. Myriads of

combinations emerged, and many more may still emerge. Chemists arbitrarily divide these atomic conglomerates into inorganic and organic compounds, although many of the latter may still be of non-biological origin. While quantum physics and theory of relativity still have substantial differences to reconcile (Maddox 1998), our understanding of the universe and the nature of energy/matter have expanded immensely during this century.

The genesis of organic life which constitutes the biosphere (and life's hierarchic ascent from simple ancient forms up to humans) appears, therefore, as a logical progression of evolution beyond the minerosphere (Dansereau 1971). Nuclear physicists and astrophysicists do not attempt to interpret the arrangement of particles within the atomic nucleus, or the shape, fields and movements of galaxies and planetary systems by resorting to an explanation of random encounters. They search instead for laws which define and predict these processes of organization with absolute certainty. Should not the evolutionary biologist seek similar laws?

The heuristic breakthroughs of modern physics, driven mainly by the theories of relativity and quantum mechanics, shattered the ideas about the origin and structure of the universe held by astronomers of the 17th and 18th centuries. It is conceivable that biology and its sister discipline psychology are ripe for similar breakthroughs when the present, purely mechanistic, concepts of life will be revised and newly defined.

Molecular evolution. Students at our universities are familiar with the Darwinist theory of evolution from the first "amoeba" to Man. Few have been exposed to the ideas of self-organization of matter from the Big Bang to biosphere. Rarely, if at all, do they hear about the increasing complexity of molecules due to the increasing complexity of organisms producing them. The structure, function and complexity are closely related. Thus oxygen molecules (O_2) we breathe are simply made of two atoms of the same element. Carbon dioxide molecules (CO_2) we exhale are made of three atoms of two elements. Urea molecules, $CO(HN)_2$, we excrete are made of eight atoms of four elements. Complex protein molecules which regulate various processes in our bodies are made of thousands of atoms and a combination of elements.

Proportionately, giant organic molecules represent only a minute component in the biosphere. What Wilber (1996) stated about the holarchic (from "holon" = the whole used by Arthur Koestler) organisation of the universe holds correct: There are fewer organisms than cells, less molecules than atoms and less atoms than quarks. While the cosmic time frame and

opportunity yields itself to it, the universe self-organizes into the temporary "world" we see and inhabit.

At the chemical level the number of theoretically possible molecular combinations and permutations is virtually infinite. In order of magnitude it surpasses the number of protons in the entire universe. Even the smallest protein molecules are composed of at least one hundred amino acids. For each such molecule there are theoretically 10130 alternative combinations (Denner 1996). Bacterial DNA consists of several millions of exactly arranged nucleotides. The number of possible permutations of such a single DNA molecule alone exceeds the scope of our imagination.

Fortunately, evolution selects what will serve its purpose. It chose carbon as a cornerstone of all living structures. Did the Blind Watchmaker try to use other elements before? There is no evidence that he did. In primeval oceans, prior to the first traces of C-based life imprinted in rocks 3.7 bill. y. BP, there was not much time available for random experimentation. Let us now part with this virtual designer in favour of a thesis that evolution is a law-abiding process. From the physical aspect it is a continuation of the hierarchical organization of tangible reality, as several modern interpreters of evolution, for instance Capra (1996) and Wilber (1996), have stated.

Even in selecting the building repertoire, evolution has been constrained, if not thrifty. It managed to assemble all its living empire by using only 16 elements out of 92 available. Out of these sixteen "monads", however, it spins millions of compounds which are still mostly unknown to chemists and even less known, with respect to their purpose and function, to biologists.

According to this thesis, then, it is not only Dawkins' (1976) "selfish genes" but much earlier atoms which have been using the vehicle of evolution to agglomerate into the largest possible clusters. With the help of specific organisms they also may seem to climb hills in the surrounding evolutionary landscape. Cells sometimes become a hatchery for viruses. But do they not, likewise, serve as incubators of macromolecules, of which DNA is their implanted camouflaged hen? Since free-living cells would not have been adequate for such a sophisticated job, they would have had to be first organized into tissue, then in organs and finally into organisms which look and behave quite strangely. All this to manufacture a unique macromolecule! Even absurdity has its logic.

Clearly, macromolecules pay some dividends to the organisms which produce them. Highly specialized molecules of snake venom help to immobilize the bitten prey, and alkaloids in poison hemlock protect this

mighty herb from being grazed. Curiously, although atoms under certain conditions spontaneously associate into complex molecules, it is the specific organism which sets up and manipulates such conditions to its own advantage. Another example of the evolutionary immanence and transcendence at work.

Today we know with certainty that of all species which have ever existed, a high percentage have perished. With them, molecules of countless specialized compounds, synthesized by the ancient "host" organisms must also have perished.

Lately, the "selfish" molecules have discovered (or developed for themselves?) a new producer. Man has introduced into the world hundreds of new compounds, never synthesized by any other species. The modern chemical industry manufactures plastic materials, latexes, artificial rubbers and other polymers unknown to nature. Many of these are nearly impossible to break down or decompose. Similarly, the pharmaceutical industry synthesizes complex drugs unknown to biota.

More recently, bio-engineers have learned to splice alien genes into microbes and more recently into pigs, fish and other higher organisms. These walking and swimming laboratories then manufacture desired specific molecules. For example, the fish *Tilapia* has been biochemically harnessed to produce insulin. Now even entire organs can be genetically modified to deliver needed compounds after transplantation into a foreign body. The development and synthesis of new molecular variants is growing exponentially and is limited only by the confines of human imagination. Kauffman (1995) calls this synthesis of new compounds by Man "applied molecular evolution".

Molecular evolution therefore continues through Man but in a quite new and more efficient way. Under the original rules, for instance, the autumn crocus (*Colchicum autumnale*) manufactures the alkaloid colchicine, and the poisonous mushroom *Amanita muscaria* produces a hallucinogenic amatoxin, muscarin. That is, every autumn crocus and every *A. muscaria* synthesizes these products. The production of various alkaloids may differ from population to population but autumn crocuses are for colchicine and amanitas for muscarin. This is their specific prerogative and often their biochemical taxonomic marker.

As in other plants and animals, human organisms also produce compounds specific to their species. Outside the body, however, these capable creatures have learned to manufacture chemicals, some of which could kill them instantly. Yet not every human individual produces dioxin, DDT, PCB's or

CFC's. The global population of *Homo sapiens* organized itself in this respect and entrusted certain specialists – through division of labour – to synthesize thousands of natural (e.g. vitamin C) and artificial (e.g. plastics) compounds. Hence, humans do not only copy nature, they are potentially capable of synthesizing all theoretically possible compounds.

Self-organization through natural selection. Natural selection is a powerful but not an all-powerful instrument of evolution. Not even long-term sorting of genes is able to put together complex systems (Behe 1996, Schroeder 1998). And the suggestion that numerous minute changes in the genotype could be successfully accumulated is also a myth (Kauffman 1995). Just this accumulation of small changes often leads to an "error catastrophe" (Eigen and Oswatitsch 1992). Spontaneous mutations filtered through natural selection are limited by the very process through which they emerge. They are insufficient to explain the immense complexity of the genome. Even the simplest genome is more complex than can be explained by random gene transformations directed by selection.

As new successful mutations accumulate, populations of the new prospering species keep climbing the nearest peak in the surrounding "fitness landscape". Surprisingly, however, as time passes, a successful population descends back to the valley where it is energetically more advantageous and safer with respect to the overall population fitness. The acquired genetic information which favoured the privileged population's advancement slowly fades away (Kauffman 1995). Only when the "fitness landscape" keeps changing under the feet of the dynamic populations the climbing will continue or be restarted.

Clearly, there is a need for a more convincing explanation of evolutionary mechanisms. The prevailing approach, reducing this process to a combination of random mutations and natural selection was never fully satisfactory. Ken Wilber (1996) is even more radical. He states that no one truly believes the neodarwinistic explanation of evolution through natural selection any more. True, Darwinian selection is part of the process which, however, "selects those transformations that have already occurred by mechanisms that absolutely nobody understands".

A functional nexus must exist between natural selection which cannot be denied, and intrinsic ability of life to organize itself. Self-organization is, therefore, a primary premise of evolvability. In other words, natural selection is a daily workhorse helping life to organize itself on a small scale after favourable opportunities have arrived through cosmic or other large-scale

catastrophes. However, the enigmatic link between the immanence of the mechanism of evolution and the transcendence of its directionality and meaning still escapes our comprehension.

Concurrence of genetic and "para-genetic" evolutions. In the elucidation of the evolutionary process one important aspect is usually overlooked. For many millions of years, the evolution of higher animals has been occurring at two levels. First there is the emphasis on biological transformation, where modifications in genotype result in changes in phenotype (i.e. in appearance and instinctive behaviour). Less attention is given to the other, psychological level, on which the acquired fitness and survival skills are passed from generation to generation via a learning process.

The survival of animals endowed with intelligence depends on more than direct programming and cannot be explained by mere instinctive predetermination of every response or behaviour. Newborn turtles and other reptiles, for example, after they leave their leathery eggs, instinctively "know" how to take care of themselves, although the behaviour of adult animals is less narrowly predetermined. Freshly hatched birds, on the other hand (and there is a level of instinctive behaviour in this as well) must be fed, and later learn from parents how to fly and find food. Even more so, young mammals must be taught by their parents many arts of life. Each kind is trained according to its niche and habitat requirements: hiding, digging dens, building shelter, supporting themselves and caring for offspring. Many animals born in the zoo are not able to survive if returned to their natural environment. In other words, without the specific skills passed on by their predecessors, an individual of these species would not survive. Clearly, raising up young and teaching them has become an indispensable part of evolution for the "higher" animals. Decades-long observation of chimpanzees has revealed that different populations of these apes adhere to different "cultural" traditions related, for instance, to the means of food acquisition. These skills are passed onto the young by teaching, they are not genetically transmitted (Whitten et al., 1999)

Newly acquired experiences, if entrenched in memory and applied often enough in analogous situations, become an evolutionary advantage of a similar order as are genetic mutations. However, in contrast to the copying of genetic information at the cellular level, the acquired "para-gene" advantage is passed from generation to generation by observation and imitation. In animals this mentorship is instinctive and non-rational, yet it represents an evolutionary mechanism, parallel to and concurrent with,

even running ahead of, genetic evolution. Thus without abandoning its biological basis, evolution is becoming self-managing and, at the human level, self-directing (Kauffman 1995). Let's follow this intriguing idea further.

But where is the Rational Animal?

May the speaking creature stand up and declare himself!

Let's close our eyes for a moment and envision ourselves far back in time in the abyss of a primeval ocean. It is a world of utter darkness and absolute silence, much like the black void far above, with only luminescent phantom-like creatures to substitute for the stars.

Let's now imagine the Paleozoic nature of the Carboniferous era (some 300 mil. y. ago). It is a period of giant fern and horsetail swamps. Layers upon layers of these mighty plants are accumulating, forming the present-day reserves of black coal. Lungfish (*Rhynchodipterus*) and primitive amphibians (*Ichthyostega*) represent the most advanced animal forms of the era. When the winds calm down, hardly a sound can be heard...

Let's further imagine the Jurassic and Cretaceous landscape of the late Mesozoic era (75-150 mil. y. ago). The fern thickets have yielded to coniferous woodlands. Herds of grazing dinosaurs move over the solid ground, followed by their ferocious predatory cousins. The landscape of these giant reptiles is drier, adorned with the first flowering plants. Comparatively, it is still a rather quiet world, although the menacing hissing and shrieking of excited animals can often be heard.

Finally, let's transfer ourselves to the end of the Tertiary, only some 5 mil. y. ago. In anticipation of the approaching ice age the climate is already much cooler. In mid-latitudes it is almost temperate and even drier than before. Landscapes are covered by conspicuous, insect attracting flowers. There are grasslands, savannas and now prevalently broadleaf, deciduous forests. Shouts, calls, hollers, screams and quacks of countless birds mix and overlap. The neighing of wild horses and howling of wolves is heard from Eurasian grasslands, while the bellowing of bisons and yelping of jackals carry far distances in the prairies of the New World. The land teems with herds, bands, and colonies of mammalian species which emerged and have populated the world since the K/T catastrophe. A global-scale Serengeti! Even Australia, the only continent where evolution did not progress beyond marsupials, keeps pace with the rest of the world in terms of evolutionary convergence, species richness and niche diversity. The scene of this colourful stage is filled with new actors. It is humming with a noisy cacophony of

voices that even Conrad Lorenz would have difficulty recognizing. Yet our main hero who would reveal the point of this tense evolving drama has still not arrived.

Finally, at the dawn of the Tertiary the expected hero appeared on the stage. His role was simple, yet impossible for all others. He spoke. He wondered. He began to call other actors by name, to ask questions. In time he would call himself a human being. Since that day the play would change into a thriller.

'Look at me,' said Bagheera; and Mowgli look at him steadily between the eyes. The big panther turned his head away in half a minute.

'That is why,' he said, ... 'Not even I can look thee between the eyes, and I was born among men, and I love thee, Little Brother. The others they hate thee because their eyes cannot meet thine – because thou art wise ... because thou art a man.'

'I did not know these things,' said Mowgli sullenly; and he frowned under his heavy black eyebrows.

(R. Kipling, *The Jungle Book*)

The branch of hominids separated from that of apes (*Pongidae*) somewhere in East-Central Africa 15 mil. y. ago. The exact time interval which would define the metamorphosis of the advanced primate into a human being would be very difficult to determine. Whiten et al. (1999) and de Waal (1999) see signs of humanization even in chimpanzees who display various "cultural" trades in populations spread across the African continent. Tattersall (1998), in his excellent book *Becoming Human*, examines human uniqueness and those attributes which distinguish them from their closest kin, such as language, creativity and thoughtfulness. Many speak of an emergence of consciousness (Jaynes 1990, Calvin 1991, and others).

So at first there was a biological evolution. Much later came the cultural history. It has taken two million years for the small, semi-upright *Australopithecus* with a stone in hand to transform himself into the modern *Homo sapiens sapiens*. Yet, it took only twenty thousand years for this naked and nomadic creature to become a person with written rights and privileges. The cultural evolution has progressed a hundred times faster than the biological one (rephrased from Bronowski 1976).

Dennett (1996) characterizes this disproportion even more succinctly: *Johann Sebastian Bach composed the original version of the St. Matthews Passion in two years, 1727–29. The composer Bach was a creation of Christian civilization, which had shaped people's cultural identity already for seventeen centuries. However, the biological roots of J. S. Bach extend into the depths of three and half billion years!*

The "enfant terrible" of the biosphere. The awakening of our human predecessors into consciousness was likely a gradual process, although, measured against the slow pace of evolution, it occurred in an extremely brief time span. Bands of primeval humans gathered seeds and insect larvae, collected eggs from bird nests and chewed on young juicy shoots as apes still like to do. They all feared beasts of prey and instinctively dreaded the snakes which had threatened their tree-dwelling ancestors. In terms of life-style, primitive Man did not differ much from his ape-like predecessors. These early groups of nomadic humans were scarce and too inefficient to severely interfere with the ecological balance in their surroundings. This might be termed a "Man in Nature" stage, because humans were still integrated within the ecosystems' food and niche fabric. This stage of humans' original innocence could have been closest to what Virgil described as '*Aurea aetas*', the 'golden age' of mankind.

In not too long a time, however, the biosphere began to feel the human presence. Our bipedal ancestors were always on the move and their aggression towards other creatures intensified. When they learned that the flesh of animals, burned in forest fires, tasted good, they started searching actively for freshly burned places. Later they learned to set tracts of dry vegetated land on fire. Man had become a big game hunter. Large numbers of species, even genera, became extinct, killed by marauding bands of this naked, ever-hungry predator. These first ecological cataclysms occurred more than 50,000 years ago and are known as the Pleistocene overkills.

The evolutionary advantage of the 'quantum leap' of higher intelligence which the new primate, contrary to all odds, had acquired, was to make a tremendous difference. Humans first learned to subdue their immediate surroundings, killing or chasing other animals. In time, they became a dominating factor from horizon to horizon. Entire regions changed their appearance. As if according to the Biblical mandate to "subdue the Earth", an alienation process was also initiated. After a short honeymoon in the "Garden of Eden", an uninterrupted epoch of polarization began: Man against Nature – but also Man against Man!

Thus, Man – the HUNTER – became a menace for game animals. Since he was smarter than other animal hunters, he soon was able to kill more than he needed to survive and killed without a restraint (*cf.* hunting by fire, or chasing bisons over the cliff).

Thus, Man – the NOMAD – monopolized entire landscapes and modified them for his grazing herds, excluding all or most other grazers from the claimed grazing range. Overgrazing, which followed, reduced first the original vegetation cover, and subsequently the topsoil was mostly eroded.

Thus, Man – the FARMER – with the help of the “slash and burn” method, cleared the land of woods and shrubs, and converted the areas gained into fields. There he started growing and harvesting crops exclusively for himself and his domesticated animals. He became a ‘super-competitor’ eliminating his old competitors entirely. This way, the world’s wilderness was “subdued” in Africa, Asia, Europe and Meso-America. The practice was later introduced by European pioneer settlers in both Americas and Australia and, sadly, it still continues on all these continents.

Ultimately, Man – the INDUSTRIALIST – excluded large tracts of land even from agricultural usage for the expansion of cities, construction of industry, roads and highways and became an insatiable hunter for mineral and fossil deposits. The entire globe has been mapped and parcelled out, including the Antarctic ice sheets. The atmosphere, water and soil have been contaminated by toxic products which may cause yet unknown illnesses and defects. Until very recently it was unimaginable that human activity could drastically change the global climate, or destroy the ozone layer which protects all against ultraviolet radiation. And yet this all has become an ignominious part of modern history.

In the relatively short time of our existence, humans have succeeded in exterminating an untold number of animal species, either through direct killing, or the destruction of their habitats. The extremely low populations of tiger, panda bear, and especially of Man’s closest kin – the chimpanzee and gorilla – are, literally, counted, even named individually.

We hear about this ongoing mass extermination of species which Leakey and Lewin (1995) aptly calls the “sixth extinction”. From the extinction point of view, Sterba (1993) might be right when he suggests that the world is about to enter the fifth geological epoch which he calls “Quintenary”. The probability of a major environmental catastrophe hangs over us as a sword of Damocles. Yet, it is also possible to envision a potential for a breakthrough

into a new evolutionary era, fertile with ideas. For both alternatives, the ongoing crisis could become a sensitive trigger-point.

We like to be judgmental about the unsavoury and reprehensible behaviour of the human species on this planet, and perhaps rightly so. In all corners of the world, at every level of the developing civilizations, people, seemingly, could have known and done better. However, we should be reminding ourselves that our instinctively antagonistic relationship with nature is deeply rooted in Darwin’s principle rewarding aggression and promoting survival of the fittest. Darwin himself suggested that natural selection can act only through and for the good of each being, and that all its physical and intellectual endowments will assist in gaining higher perfection (Darwin and Leakey 1986). These Darwin’s words still carry a prophetic charge.

Every evolution-advantaged species, from fast-mutating viruses to rabbits introduced in Australia, would behave alike. It would strive to achieve the maximal propagation of its own species and to fill the earth. The human species is no exception and has instinctively followed this inherited ecological predisposition. It is also true that much of the time people have maltreated the surrounding nature out of sheer unawareness. It has been ignorance which has damaged the biosphere, and the lack of knowledge or means of earlier societies to do more harm should not be interpreted as their friendly attitude towards nature (Wilber 1996).

The Transformation of the Biosphere into the Homosphere

Meta-genetic evolution. To repeat, life has long been developing through genetic evolution. The organisms’ diversification and speciation have occurred due to gene modifications and new gene additions (or hypothetically but less likely through dormant genes ‘activation’, Schroeder 1998) within the hereditary blueprint. In higher animal species, in addition to genetic evolution, the perpetuation of extant and emerging populations has become dependent on para-genetic evolution (*via* the training and learning processes).

In contrast to these biological means of species perpetuation, meta-genetic evolution is not concerned with the biological preservation, in this case of the human species, at least not directly. It is preoccupied with the refinement of personal and societal values, and with the progress of civilization. This process can be followed deep into human prehistory when the first microsocieties were formed and rudimentary rules implemented. However, the real outbreak of meta-genetic evolution began with cultural evolution. Humanity embarked on the advancement of its abilities by a direct,

non-hereditary transfer of common experience among its individuals. The evolutionary efficiency of these changes has surpassed those of the biological nature (Bronowski 1976, Krupicka 1994).

It took 30,000 years for Cro-Magnon Man to invent the plow. Another 10,000 years passed before the development of the steam engine. However, less than 200 years later, an Apollo rocket lifted a crew of three humans, carried them to the Moon and safely brought them back to Earth. In the span of another 20-30 years NASA plans to disembark human spacefarers on Mars and start modifying its conditions for permanent habitation (Fig. 1).

Concurrently, with the upsurge of technology, research into the manipulation of human genetics is advancing quickly. Bioengineering (among the already routine intrusions into genetics of non-human organisms) already provides the means for deep invasions into the human genetic makeup. It has already achieved some control of peoples' mental state but the potential in this direction is beyond imagination. One obvious goal is the creation of a super-intelligent, almost non-aging being, which, in comparison with the present state of human evolution, would be as far from us as we are to the state of a zygote from which we developed (Kelly 1995). One of the possible routes is Wiener's cyborg: a brain coupled with a computer, built into a mechanical contraption which substitutes for the human body (Wiener 1948, 1950; de Kerckhove 1995). Kurzweil (1999) is, in this respect, quite specific when he pictures the world at the end of the next century: *There is no longer any clear distinction between humans and computers. Most conscious entities do not have a permanent physical presence... Humans who do not utilize implants augmenting their perceptual and cognitive abilities are unable to meaningfully participate in dialogues with those who do... Life expectancy is no longer a viable term in relation to intelligent beings.*

Are these ideas just the megalomaniacal dreams of modern technocrats without a trace of modesty, or do they present a snapshot of a realistic perspective not too far ahead of us? Did not Teilhard de Chardin (1969) as early as in 1950's write about the "ultra man" of the future? Imagination is a strong propeller of human progress but it can as often lead to retrogress and societal breakdown.

Mind and heart. Living organisms are not mere biological machines, as the mechanists of the 18th and 19th century argued, and as modern reductionists still emphasize (Capra 1996). The brain only superficially resembles a computer. The present-day computer is strictly deterministic and its operations must still be directly or indirectly programmed. The

nature of the human mind is an antithesis of determinism since its basic features are freedom and curiosity. It searches for causes of an action, and deduces consequences. It asks questions, among others about the meaning of its own existence. Often it seeks knowledge for knowledge's sake alone as emphasized already by Aristotle. From this perspective it makes no sense to compare a computer program with a human mind. Even the most complex computers lack reflective intelligence (which separates us from even the most advanced animals). Nevertheless, this ingenious human invention is extremely useful to us. After hardly half a century of their existence, computers have become so indispensable that a minute oversight in the original design, known as the "Y2K" bug has caused a world-wide scare of potential chaos, if not a threat of a collapse of our civilization.

The celebrity computer Deep Blue did not get angry when it lost the chess game to Grand-Master Kasparov in the spring of 1996. Nor did it smile victoriously when it beat Kasparov a few months later. It did not care either way. Deep Blue didn't even realize that it was engaged in playing. It does not know that it exists. If unplugged, the computer is dead. If under power, it is not alive even though it can respond to commands and execute programmed instructions. It reacts, however, much faster than any living being ever could, thousands and millions of times faster. For this amazing artistry the computers owe credit to their ingenious creators. It is they who invented them, kept improving and expanding their abilities, manufactured them and made them available to other humans as highly useful tools. This is much the same way as our distant ancestors invented a club, a spear and a trap, and ancient Chinese thought out the simple yet ingenious calculation device, the abacus.

Although computers can execute quadrillions of mathematical operations in a very short time, they lack the capacity to reason (i.e. "to think or argue in a logical manner", Webster's Dictionary of English Language). They are also impotent to experience joy, grief, enthusiasm, dislike or anger. They have no "emotional intelligence" (Goleman 1995) which is a personalized version of an otherwise coldly logical and reflective (self-mirroring) intelligence. In an emotional vacuum, even Descartes' *Cogito ergo sum* (I think, therefore I am) would not be able to convince us of our own existence. Sometimes we need to pinch our arms, to believe that we are awake and not dreaming.

Every successful act of intellect is accompanied by a reward and every mistake by a disappointment. Many mental constructs such as games, crosswords, puzzles, mathematical and logical twisters are invented for intellectual satisfaction alone. At a higher plane there are all kinds of arts: literature, music, visual and other artistic expressions. Although nature blazes with colours, only humans are capable of experiencing their beauty. We often seek and indulge in imagination, fictive adventure and wanton entertainment over useful and productive work. Whenever we can, we reward ourselves with these "non-profitable and nonsensical" activities and even spend extra money to get them. The quality of these intellectual and sometimes less than intellectual pleasures differ, indeed, from person to person. Computers have none of these in common with us, at least not yet. However, research incorporating values and emotional components into artificial intelligence machines is on the way, although these may "not necessarily be the same values and emotions that humans exhibit" (Kurzweil, 1999).

The ultimate question is on the computers' thinking ability and their consciousness. Will they always 'just calculate' or will they one day master the 'subtlety and complexity' of human thinking? Will they ever realize their own existence, could an artificial intelligence ever become a person? "This is a difficult question even to pose", Kurzweil reflects but what he really means to say is: Never say never!

A special form of ratio-emotional experience is epitomized by humour. It is an intellectual frolic for the sake of mental amusement. Here the intellect provokes itself by arranging two seemingly contradictory theses against each other. The more refined the plot, the higher the intelligence required for its discernment, and the higher the satisfaction gained. Our intelligence is delighted by its own acuteness and shrewdness.

The spectrum of manifestations of emotional intelligence is broad: laughter, joy and excitement—but also grief, sorrow, fear and disappointment. While some of these emotional expressions can be observed in higher animals, only human beings are capable of intellectualizing them, that is, experiencing them, and realizing what they experience. We all need shelter and food. We need challenges to stimulate our mind. Most of all we need to be loved.

Love and passion are the strongest emotional domains in humans. A recent car advertising billboard put it succinctly: 'Without a purpose there is no reason. Without a passion there is no reason for existence'. Each of us can

confirm that the heart and head do not always agree with one another. "Le coeur a sa raison que la raison ne comprend pas", says Pascal. Mystics have always considered the heart as the dwelling place of love. In the broadest sense, love is the primary affinity, the glue of the universe, its metaphysical principle of coherence. In the words of Mother Teresa: 'Love does not have any other mission but to communicate itself'.

This love principle can be traced backwards from animated relationships among people, through the sexuality of living organisms back to the polarity of molecules and the inner and outer forces in atoms. The existence of moral and physical evil in the form of hatred, aggression, pain and annihilation is sometimes seen as the counter-poles of this universal metaphysical quality. Yet, the world still "holds together", although it is being continuously attacked by this entropic and ethical corrosion: Teilhard de Chardin (1964) postulates that this all-penetrating and all-unifying cosmic quality is realized more forcefully as the world becomes more spiritual. Mind over matter! Love is the primary reason and ultimate aspiration of creation: *Sic Deus dilexit mundum...*

Human love has been expressed through the three classical concepts of AMOR (passionate corporal love, now often degraded to mere sex), EROS (idealized yearning and infatuation of heart) and CARITAS (merciful altruistic love to the needy). It is clear that this "trinity" of love is a hierarchical concept. The trappist monk, Thomas Merton (1975), shortly before his untimely death, touched upon the subject of love: The goal of our human intimacy is not just *communicatio*, intellectual exchange of ideas but *communio*, sharing. Universal unification of heart and spirit.

Personality. None of the attributes mentioned earlier embodies the crossing of the threshold to humanity more clearly than the manifestation of personality. At the dawn of human history a distinctive integration of body and mind took place, which conveyed itself as an absolutely unique behaviour for each human individual. The most fitting expression of this state of being is dignity.

Atoms of the same element, more accurately of the same isotope, are identical. However, at the molecular level, the number of perfect copies is already significantly reduced. With increasing complexity of structure, the absolute number of identical individuals is diminished, while the diversity of shape and function is compounded. No living individual, starting with the simplest protists, is identical with another individual of the same species. (As a matter of fact, even the concept of "species" is artificial. It has many

definitions and there is poor agreement among the authors who are using them.) From subatomic particles to humans one can follow evolution from generality to a level of uniqueness that makes substitution impossible. Bronowski (1976) expressed this dignifying process by a fitting aphorism: From it to who to Ladies and Gentlemen! Each person is an original, a non-reproducible prototype. Not even identical twins or artificial clones are absolutely identical, although they may be very similar in appearance and strikingly alike in behaviour.

With the reduction of phenotypic conformity, the predictability of behaviour also decreases. Higher animals have an impressive degree of indeterminism, demonstrated in complex situations (e.g. documented cases of dogs saving their master) and in playful behaviour; animals are born comedians (Kovalski 1991). Only humans, however, are conscious of their indeterminism. Freedom of thought and action (in a non-political sense) is an important attribute of personality, although not all people are free to the same degree, and all of us are sometimes strongly determined in behaviour by life circumstances (Skinner 1972). The degree of freedom is, therefore, related to the fullness of one's personality. In an evolutionary sense, the emergence of personality is a new phenomenon on this planet and, possibly, in the universe.

The homosphere. With the growth of the human population, an era, previously not-experienced by nature, began. It was an era of culture. The manifestation of reflective intelligence tipped the previous natural balance in favour of the human species. It caused this singular group of animals to become first less challenged, soon dominant, and finally domineering wherever they appeared in significant numbers.

As other heterotrophs, Man obtains his food through other organisms. However, he eluded the biological controls which ensure that no species takes over any given ecosystem in perpetuity. The organisms which had lived in areas, now urbanized and converted in agricultural lands, were killed, driven away, or stripped of the habitats. Thus, the resources, previously shared among all the inhabitants of the region, were diverted for the exclusive use of humans.

For millennia, humans populated the planet very slowly. However, with the onset of the modern industrial revolution, the population growth curve has become exponential. At present it is already explosive, exceeding the population expansion of any species in any known self-sustaining natural ecosystem (Svoboda 1989).

Besides animals, water and wind, modern humans also learned to utilize energy from fossil and inorganic sources. These skills enable them to colonize 'en masse' regions formerly inhospitable, even inaccessible. No wonder then that Man has become a pivotal ecological factor in the entire ecosphere. Currently, no place on this planet can be found which has been spared from substantial alteration, or at least from the traces of human presence. Toxic substances are being deposited even onto arctic and antarctic ice. Moreover, tens of thousands of rocket fragments already orbit our planet. Species diversity of the world's great biomes is being steadily diminished and their functioning is being adversely affected. The biosphere is under the immense pressure of this singular bipedal species, *Homo sapiens*. In fact, the entire biosphere is being rapidly transformed into a homosphere, i.e. into a realm where *Homo* prevails and exerts his direct or indirect influence and control (Svoboda 1999).

Since 1901 when Marconi intercepted the first wireless transatlantic signal, the homosphere has been expanding into the cosmic realm. On October 4, 1957 the first earth-orbiting satellite, Sputnik 1, was launched by the former Soviet Union. The "impossible dream" of mankind to reach the Moon was fulfilled when American astronaut Neil A. Armstrong and Edwin E. Aldrin, Jr. landed and walked on the moon's surface on July 20, 1969. The feat has since then been repeated successfully six times, not, however, without a substantial quantity of junk being left behind. Human-proxy robots have already landed on Mars to investigate its environment for human disembarkment in a not too distant future. Scientific probes have reached the planet Venus and photographed several other planets. In 1973, Pioneer 10 passed through the asteroid belt and became the first man-made object to escape our solar system. Two Voyager spacecrafts, launched in 1977, carry into the Milky Way golden placards with engraved hieroglyphics depicting human beings. It was hoped that these might be comprehensible to intelligent aliens, if found by them (Sagan 1994). The envelope of the homosphere is expanding within the expanding universe.

A non-biased observer of these busy clothed animals, whose numbers have doubled every thirty years during this century, would probably acknowledge that lately, their activity is not always destructive. He would notice that recently, some humans have been trying to preserve, protect and rescue creatures which would have been mercilessly killed in the past. They have even been observed trying to restore certain devastated areas to their former natural state – although these attempts have been often inadequate, even futile.

With their increasing domination over the rest of creation, humans are starting to realize their responsibility for its survival. They study and assess their own behaviour. The feedback between human action and its constant self-evaluation has become an established process in modern society. Albeit slowly and inefficiently, corrective and preventive measures are now being implemented at all levels of human activity. Sadly, however, the large majority of the world's citizenry care about their planetary responsibility as much as an average American worries about his country's trillions of dollars in debt. Sooner or later, however, full responsibility for the increasingly dysfunctional biosphere will have to be accepted. In contrast with national and international economies, debts towards the biosphere cannot simply be written off. On regional and global scales, the disparity between the rich and poor is enormous and still increasing. Similarly, disparity is growing between the relatively few who advocate and practise principles of sustainable economics and nature conservation, and the overwhelming majority of mankind, which out of starvation, greed, apathy or sense of helplessness do not care. In the meantime, our planetary bio-economical indebtedness is further increasing. It is not difficult to imagine the consequences.

In this essay, however, we are following a long-term evolutionary perspective. As a process of structuralization and increase in complexity, evolution has crept ahead through endless hurdles and catastrophes, owing its success to the individuals who survived. This process of an uphill struggle is aptly symbolized in a medieval ikon: the Ladder of Divine Ascent, kept in the St. Catherine monastery at Mt. Sinai. In the ikon, the monks are climbing the ladder of virtues into heaven, but only some make it to the top. Many are drawn by demons to the abyss below because they were unable to withstand the trial (McManners 1990).

Human genius has always outrun the reality of the present time. At this very moment, a great number of individuals are conceiving science fiction scenarios which are, to a large extent, still unrealistic. At the same time, however, specialized futuristic institutions and brain trust teams are independently charting realistic venues of societal development for decades even centuries ahead. In spite of Horgan's (1996) rather numbing perception that all that needed to be discovered has already been discovered, further breakthroughs in physics, astronomy, biology, psychology and even on the socio-political scene are predicted and expected (Maddox, 1998). The obvious challenge of Mankind is the control and management of the biosphere. We witness the extermination of former plagues such as polio and smallpox, the

stabilization of human population (one hopes soon), and population growth of species threatened by extinction (Dubos 1974). Serious attempts are contemplated for a reconstruction of species already extinct *via* retro-breeding and gene manipulation, as well as the development of artificial intelligence and the synthesis of living matter, although in that last item there has been no progress since the seminal experiment by Miller 45 years ago (Horgan 1996). Such an ambitious program, together with the expanding space program, would not fare well without the economic and political globalization. Inevitably, it will also bring about further curtailment of personal rights and freedoms.

The rule which makes us drive on one side of the road is useful and reasonable. Rarely do we, however, realize that by adopting this, and many other useful rules, we have been giving up piece by piece our basic right to free movement. Similarly, to be electronically registered and evaluated in terms of a personal eugenic, health, economic and criminal history could have practical advantage for the society and the healthy/wealthy law abiding citizen. But the availability of this information could also easily be abused by criminals or the state. Personal I. D. cards containing all possible confidential information, much of it unknown to the holder, are already in circulation. A non-removable implant, furnished with a computer chip and emitter, could identify and locate everyone instantly anywhere on the planet. In this way a person's history could be tracked as well as where the individual was this morning, yesterday, a month or a year ago. Where he stopped, what he bought, where he slept and with whom he socialized. This is not a fantasy about a far distant future. Such technology already exists (Quitener 1997). These hi-tech gadgets are being used, for instance, to check on offenders confined in-house, or on those who must comply with a curfew. This litany of modern micro-technological achievements has its own dark side: the electronic penetration into private space and life, electronic pirating, blackmail, terrorism and similar. All new crimes which have already entered into the vocabulary of modern law-breaking dictionaries (Stephenson 1997).

The science fiction of Jules Verne appears childish in comparison with present-day deep-sea diving or lunar transport technology. Similarly, the relatively recent Orwellian saga of Big Brother pales in comparison with the already practised silent control over citizens by some modern states and various influential interest groups. Current technological and sociological inventions all have their potential benefits and drawbacks. Once people experience their sweet taste, they find it difficult to be without them, often

disregarding the side-effects. Yet an even greater need is that of the ethical progress which would keep pace with the ever-advancing technology. Unfortunately, developments in the spheres of justice and equitable social arrangements have shifted in the legalistic direction instead. Will the letter of the law, substituting for the discarded moral norms, be able to hold human society within the limits of civilized conduct? Certainly, this is a legitimate question.

The noosphere. Matter around us exists in three states: as solid, liquid or gas. For the sake of analogy let's now imagine that the non-living crust of our planet, the minerosphere, represents the solid state and the biosphere the liquid state. What in this analogy could be represented by the gaseous state? It would be the noosphere, a domain of interconnected and mutually communicating human minds. Allegorically, we could consider the noosphere as the brain of mankind (Krupicka 1994) where the nerve cells, the neurons, are human minds and the dendritic synapses are various communications channels. Le Roy, Teilhard de Chardin and Vernadsky contemplated the noosphere as a new planetary envelope ('neo-envelope'), a thinking layer of the biosphere (cf. Svoboda and Nabert, 1999). We see the noosphere as an intellectual-spiritual "emanation" of the biosphere through its human elements. However, not even this analogy is adequate. The noosphere enriches, fertilizes and stimulates individual minds, but it does not exist independently apart from them. It is immaterial. Concepts such as 'global supermind', Vernadsky's 'collective personality' and Teilhard de Chardin's 'collective consciousness' or 'thinking membrane' are perhaps more accurate allegories. The noosphere does not emit any measurable radiation (discounting telepathy and other parapsychological topics here) and does not create any 'field'. It is, therefore, scientifically unprovable. While the homosphere expanded into a three-dimensional space, the landscape, the noosphere is introverted. It occupies a non-dimensional domain of our minds, the inscape, which is, in the most proper sense, extraterritorial. For the present it remains also a strictly personal domain with the connections to the external world under the control of the individual. Nonetheless, it is a real sphere, self-evident to itself.

The rampant growth of communication systems, such as e-mail and the world wide web which is a new way of sharing information and ideas among human minds, causes the heuristic capacity and productivity of the human race to magnify explosively. It is as if the evolutionary process of 'cerebralization' of the human species were transformed into a process of

cerebralization for the entire planet. The noosphere is also now experiencing exponential expansion. Unlike human population growth with its inherent limits, the expansion of the noosphere may continue indefinitely. It will, inevitably, influence biological evolution, particularly with respect to humanity itself.

The noosphere is not involved in the 'real' world only. It spins and conceives worlds of a 'virtual reality', and lures many into these worlds. This artificial cyberspace will soon become a powerful factor in our thinking and imagination, and will, no doubt, affect our understanding and defining of 'reality' itself (Kerckhove 1995).

The Future

Doom or boom. Since its appearance mankind has diversified into races, linguistic groups and cultural regions. The present drive leads, inevitably, to integration: one planet Earth, one mankind, one common language and one global civilization. A New Order of things! This may be logical and practical but not to everyone's liking. There is value in diversity. A pluralistic society is more resourceful and definitely happier than a regimented society with apparently the only goal of expanding intellectually and materially.

Visionary thinkers are convinced that future journeying won't be "business as usual". In its highest aspirations, mankind aims to abandon the antiquated trodden paths and even strives to bypass the laws of nature. The process itself is morally neutral. It becomes, however, morally accountable through the intent and means of the involved society and its leaders. Globalization is an important step towards achieving these ambitions and might benefit the entire human race, if realized in a form that respects all peoples' rights and traditions. Yet globalization by means of unilateral force and a single ideology, that pushes established cultures over their resistance, must inevitably, be inefficient, counter-productive and ultimately oppressive.

As an eternal pilgrim, Mankind journeys towards his remote haven, Teilhard de Chardin's "Point Omega". This point will embody the fulfilment of self-organized evolution, from the flash of pure energy at the moment of the universe's birth, through the materialization of the tangle worlds, through humanity and ultra-humanity – to a state of pure consciousness (Figure 2). At this *meta spiritualis*, consciousness will reach its full independence from the material world, which is ever changing and ultimately subject to decay through entropy (Kurzweil 1999).

The imminent great calendar divide, we are just about to cross, could become a historical milestone. The past and future events might be referred to as taking place "before" or "after" the break of the Third Millennium. Not so much because this significant transition period is, as expected, electrifying the atmosphere by resurrecting messianic hopes for the, all renewing Parousia (Kingwell 1996) – but due to an ongoing deep scientific, economic and, hopefully, spiritual transformation of the entire human race. That the societal transformation unfolds at the rare calendar divide is itself an intriguing coincidence.

Globalization itself is a step towards cosmization, i.e. towards the theoretically unending physical and intellectual expansion of mankind into the universe (Sagan 1994). Do not science fiction novels speak about intelligent aliens? Why not become one of them, possibly the only one? Yet seemingly insurmountable difficulties lay ahead. How can we break or bypass the physical barriers to reaching other worlds within a time span compliant with the human dimensions? Even the light from the closest star, Alpha Centauri, travelling at its phenomenal speed, needs four years to reach us. Our imagination should never be less daring than are the possibilities of its realization. However, the realization of these far-reaching dreams depends on one basic premise: that the amazing, enlivened boat of our planet Earth will be able to sustain its crew and will not capsize. With this caveat in mind, what alternatives are there then for the mankind?

The thunderbolt alternative: Life on this planet could easily be paralysed for ages, even destroyed by just another collision of the Earth with an asteroid. The probability of such an encounter is relatively low, but not insignificant. Our planet is dotted by many craters, some of them blasted by cosmic projectiles much larger than the one which precipitated the extinction of the dinosaurs. To counteract such an eventuality, astronomers have started a program monitoring the movements of several thousands asteroids. The trajectories of about 200 of them are close to the orbit of our planet. Of those about 20 percent will sooner or later collide with the Earth (Sagan 1994). A defence system is being contemplated which would avert such a deadly collision by destroying the incoming asteroid of deflecting it in order to cause it to miss our planet entirely. The realization of such a system, however, will be beyond our technological and budgetary means for a long time, and even then, such a defence system could hardly ever become 'bulletproof'.

The self-annihilation alternative: For the first time in the history of the planet one prospering species has become able to deliberately turn its evolutionary advantage towards itself. This species has acquired immense knowledge about the environment from which it has evolved, and about itself, so much so, that it attached the laudatory attribute 'double-wise' (*H. sapiens sapiens*) to its generic name. All evidence, however, shows that this species has not yet grown to a full realization of the claimed attribute, at least not to the degree of self-preservation.

Consequently, a much more probable and therefore worrisome alternative for Mankind is the likelihood that it will destroy itself. And the possibilities for our destruction are numerous: a global nuclear, bacteriological or viral holocaust, epidemics arising from an experiment going astray, the poisoning of the biosphere through general neglect or terrorism, or a combination of several causes occurring simultaneously... Every year a new threat can be added to those already on the list.

Even more probable, and more compatible with our evolutionary history, is the possibility of partial annihilation. It is a perspective of hi-tech wars, genocides and self-destructing revolutions while the world's living conditions in the affected regions sharply deteriorate. Global chaos, anarchy, despotic dictatorships, total failure of reasonable communication (modern confusion at the tower of Babel) are all props readily available to future manipulators of the world's affairs and destiny.

The endless cycle of idea and action,

Endless invention, endless experiment,

Brings knowledge of motion, but not of stillness;

Knowledge of speech, but not of silence;

Knowledge of words, and ignorance of the Word.

All our knowledge brings us nearer to our ignorance,

All our ignorance brings us nearer to death,

But nearness to death no nearer to God.

Where is the Life we have lost in living?

Where is the wisdom we have lost in knowledge?

Where is the knowledge we have lost in information?

The cycles of Heaven in twenty centuries

Bring us farther from God and nearer to the Dust.

(T. S. Eliot. Excerpt from the poem: 'The Eagle soars in the summit of Heaven. Choruses from 'The Rock'.)

Ahead with the breakthrough alternative. The history of evolutionary accomplishments can be compared to a multi-tiered pagoda where the floors are widest at the base and progressively narrower towards the top. Furthermore, every higher floor is farther from the previous one. So, in terms of the degree of acquired intelligence, humans are more distant from apes than are apes from monkeys, monkeys are more distant from Prosimians than these are from lower primates, etc. – down to the first sentient being. To extend this analogy, the Man of the future (the “post-human”, according to some futurists) will be better equipped functionally than we are now. Should biological evolution not meet our expectations, bioengineers will try to push it in the desired direction and improve what is necessary. And should the body show signs of aging or other deterioration, the individual may be ‘reincarnated’ by simply transplanting his “chip” containing all his information into another body, possibly one grown in advance just for this purpose. Immortality secured – at least for the prominent individuals! Every new born child would become a cyborg. If this sounds too mechanistic, as it in fact is, read Darling (1996). This is how the modern Jules Vernes fantasize. But do not chuckle in disbelief. Verne’s fictions were outdone by reality in less than a century. Conceptual designs coupling human and artificial intelligence, and followed by experimental programs are firmly on the way (Hardison 1990; Kurzweil 1999).

In the meantime, we are changing the world around us by small but frequent steps. Transgenic species are now being routinely generated and quickly applied in the agriculture and livestock industries. A large portion of the corn, canola, soybean and cotton grown in North America has been already genetically modified. Responding to public distrust of genetically modified organisms as potential long-term hazards to human health, Europe has imposed a ban on the import of transgenic livestock and some crop plants.

Are visions of this kind out of the range of moral norms engraved in us over millennia? Are we trying to play God? The Human Genome Project in progress is closest to such an idea. A powerful fruit of knowledge is being seized upon by Mankind: the blueprint of its own existence. Let’s pray that it won’t prove to be that from the God’s forbidden tree. There will be a great temptation to manipulate the pearl necklace of our DNA, to keep changing the beads, to transfer some into animals. Organs for human transplants, for example, are badly needed. And, perhaps more curiously, which transferred genes would make a chimpanzee a human? These are all exciting and

daunting prospects for scientists, theologians, ethicist and politicians, and ultimately for the entire human race to deal with. Any identity crisis of the past will pale in comparison with those mankind is about to face. “Learn to know yourself”, Socrates prompted his disciples. We must have misunderstood him too. Neo-Darwinists may not have a problem with all the hasty and aimless invasions into the genetic code, since the clearing house of natural selection will take care of the future. What will prove fit will survive – the less suited will perish in the process. Sorry!

Not only genetic manipulation and our all-life penetrating technology worries many concerned people. Many erroneous and harmful ideas are gaining ground and winning. They may do lots of damage and cause great suffering before they are abandoned or defeated. Among the most recent ones we could mention Nazism and Communism. With their demise, however, the silhouette of a new potential oppressor of freedoms can be seen on the horizon: the autocratic state. Moreover, in the current excited pre-millennial atmosphere, the deviant fantasies of new-messianic leaders have already brought about unprecedented waves of group suicides in Jonestown and Waco, from Solar Temple members in Quebec and Switzerland to Shoko Asahara in Japan. We truly live in extraordinary times!

Intricate projects of modern engineering are now being tested on computer-generated models. In a similar way, the collective intelligence of the noosphere can serve as a potent instrument of verification for newly introduced ideas. Only through free global discussion may it be possible to avoid great errors of judgement. This may, one hopes, prevent or at least expose the malevolent actions of future conspirators and aggressors.

The preservation and cultivation of a healthy Ethos is therefore *conditio sine qua non* for our survival. An old Latin adage comes to mind: *Serva ordinem et ordo servabit te* (Serve the order and the order will serve you). A logical requirement for preservation of humanity in an orderly, self-organizing universe. However, reason alone cannot be the sole arbiter determining the ways of the future. The unity of ‘head and heart’ has historically proven to be the most reliable pilot on any road, even the most perplexing one.

The external deterministic world and the non-conformist world of our interior are now drawing closer together resulting in an urgency to renew our relationship with nature, our fellow man. Yet there is no absolute certainty about anything any more, only high statistical probability. Not a clear transparency only translucent “opacity” (Prigogine and Stengers 1984).

What then are the driving forces in our evolving human society? From the very beginning our cultural evolution has advanced by following the meta-genetic path. Ideas have been complementing the biological role determined by genes. Competition, leading to the elimination of aberrant ideas, and to the ultimate survival of brighter, more potent ideas is the current form of natural selection. Since the human race has not self-destructed as yet, this intangible mechanism has, so far, worked.

Curiously, in Dawkins' upside-down world the 'selfish gene' has progressed one step further – for what selfish benefit one can only guess – and through the human proxy has procreated a new replicator, the 'meme'. According to memetics, claimed to be new emerging science, our minds are shaped by memes as our anatomy and physiology is patterned by genes. Memes constantly invade our mind and spread further through high-tech devices such as telephones, computers and means of mass communication (Blackmore 1999).

The mind will always find the means to satisfy its intellectual yearning. Thus future progress will be hindered only by the boundaries of our imagination. However, wouldn't the human individual get lost in the unfolding fabric of "cosmic" humanity? Historically, such has been the case with many societal grand-designers. In Plato's Politeia, the individual is valued only as a citizen. The family is dissolved because it would lessen loyalty to the state. Needless to say that Plato's political ideas have never realized but there have been many unsuccessful attempts to institute alternatives of traditional societal arrangements. Clearly, the prosperous continuation of human race will depend on the degree of dignity, freedom and respect for every person.

The cosmic perspective for humanity is a more familiar concept among theoretical physicists and viewers of science fiction movies than it is among traders, farmers or even clergy, but the number of its adherents is steadily growing. The third crossing is well on its way and everyone is involved, no matter what their level of awareness or attitude. Man has mapped the land and sea, made an inventory of non-living and living things on Earth, deciphered some of the fundamental laws and forces of nature (Horgan 1996) and is now "reaching for the stars". Mankind is being pushed against the ceiling of the limiting Newtonian world, weighing its future possibilities of stagnation or breakthrough – collapse due to implosion or an explosive rupture into a new dimension of existence. This intellectual outburst is already taking place. Just reflect on the acceleration of the discovery process since WWII. True, the expansion of this intellectual fireball must be measured

on a historical rather than human life time-scale but the cutting edge of its pressure wave is moving ever faster. It is gaining rather than losing momentum. The impacts will be more profound and consequential than those of any previous cultural processes. Humanity is growing out of its "teen" years and is becoming more mature. People have always reflected on the meaning and ultimate goals of their individual existence. Now humanity as a whole is starting to search for the meaning of its global existence, realizing the "superhuman" responsibility flowing from its predisposed role in the evolutionary process. Yet, the philosophical postulate stemming from the notion of 'predisposition' intrinsically anticipates the existence of a pole towards which evolution is moving. If this is the case, the fate of Mankind is not entirely in our own hands.

The Apostle Paul wrote: *When I was a child, I used to talk like a child and think like a child, but now I am a man, all childish ways are put behind me...* (1 Cor. 13, 11). These words could be applied also to the maturing human race. The existence of Man is not only biological but also transcendent. The self-organizing universe, with biological evolution as a ladder towards new levels of existence, is itself a transcendental process. It crosses barriers and establishes itself on higher and higher planes. It is not a random process. In spite of the past cramps and convulsions which almost destroyed all development on the Earth, it continues and is picking up new wind in its sails. It is directed and it makes sense. Still, not everyone is convinced. The astrophysicist Stenger (1995) dedicated many of his writings arguing that *the universe is about as simple as it could possibly be, with no evidence for design at its origin and structure arising spontaneously as the natural course of events...* Even consciousness, he feels could be explained by quantum fluctuations which result in somewhat indeterministic processes in the brain and in "non-Newtonian behaviour".

The logic of this reflective essay brings up a vision of a far-reaching and ascendent trajectory of developing Mankind. Nothing from this perspective is carved in stone, of course, and its individual variants of prosperity or decline exist as switches on a very long railroad. Where justifiable extrapolations end, there faith begins.

The ever innovative evolutionary artistry of nature, so convincingly recognized by analytical reasoning is now accepted as a undeniable fact by the majority of evolutionary theorists (Wilber 1966). The inevitability of the First Mover, evident already to Aristotle, is again recognized by many as the most plausible hypothesis of the universe's existence. It was He who brought

about the Big Bang and furnished it with laws so that its immense quanta of exploding energy would not vanish into entropy and chaos. It was He who made pure energy organize itself into civilizations of atoms, galaxies, solar systems, ecosystems, ultimately, into historical human civilizations (Swimme and Berry 1992) and one day, let's firmly believe, into a spiritual civilization of love (Anonymous 1985). Humanity is changing. The raw principle of the survival of the fittest is being softened by a new understanding of authentic power based on the "perception of the spirit". This perception opens new horizons of opportunities and prosperity, and it becomes a necessity if we are to survive (Zukav 1989). Evolution requires that we make an "investment in a harmonious future..." and that depends on our ability to "invest psychic energy into the future" (Csikszentmihalyi 1994).

The reality of the world which surrounds us, and includes us, is mysterious but not gloomy or dispiriting. Although its dimensions exceed and extend beyond us, they also allow, even enable us to orient ourselves and find the right bearing. Lifting veils is a never-ending adventure. The resulting revelations excite, inform and liberate us. In time, they may also transform us. This most essential mandate, to seek understanding and to wonder, for which humanity seems to have been commissioned, carries its own reward. It deeply satisfies our intellectual appetite and resounds in our heart. With each new piece of knowledge the world around us is more comprehensible, but also cosier. We feel more at home in the universe now (Kauffman 1995), and there is still so much to be done.

*The work is not upon us to complete
but neither are we free to pass it by
(Wisdom of Old Fathers)*

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Figure captions

Figure 1. The crosshair of time. The present can be envisaged as an envelope of a pressure wave which carries us from the past into the future. The time scale is logarithmic.

Figure 2. Three historic steps (transgressions) of evolution. The cosmic evolution began by the surge of pure energy (Big Bang) which has condensed and structured itself in the material non-living and finally enlivened universe. This evolutionary structuralization accelerates through biota and spiritualises through humanity.

Figure 1

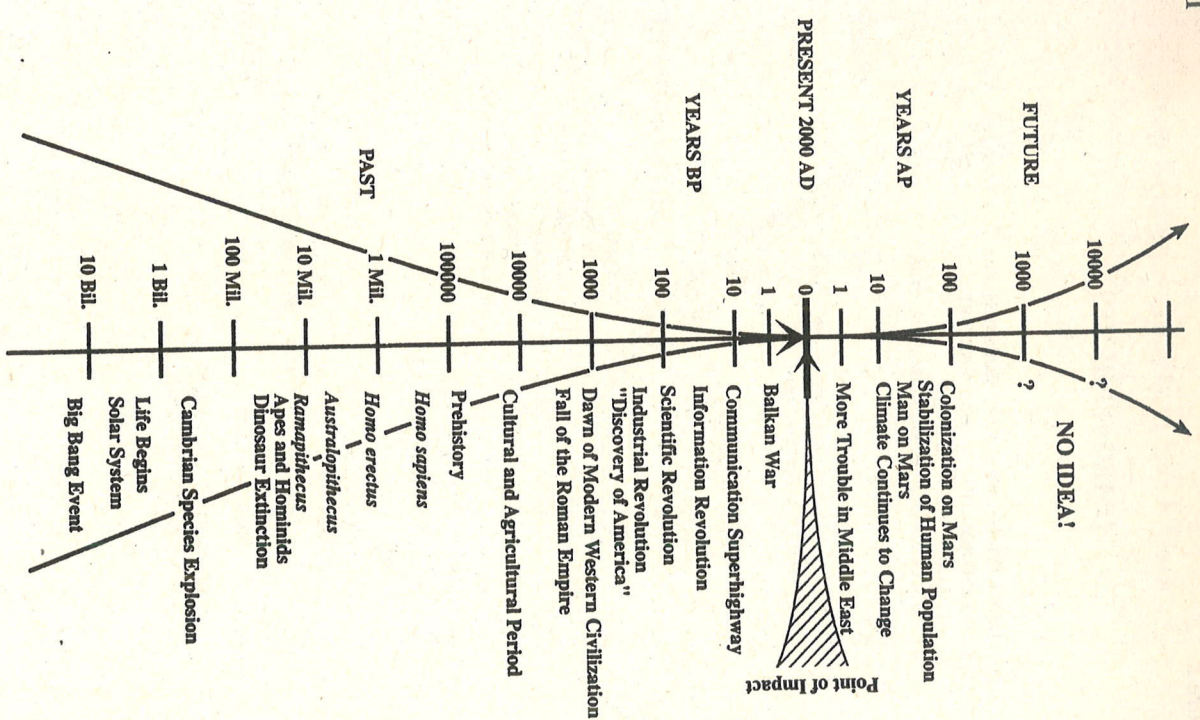
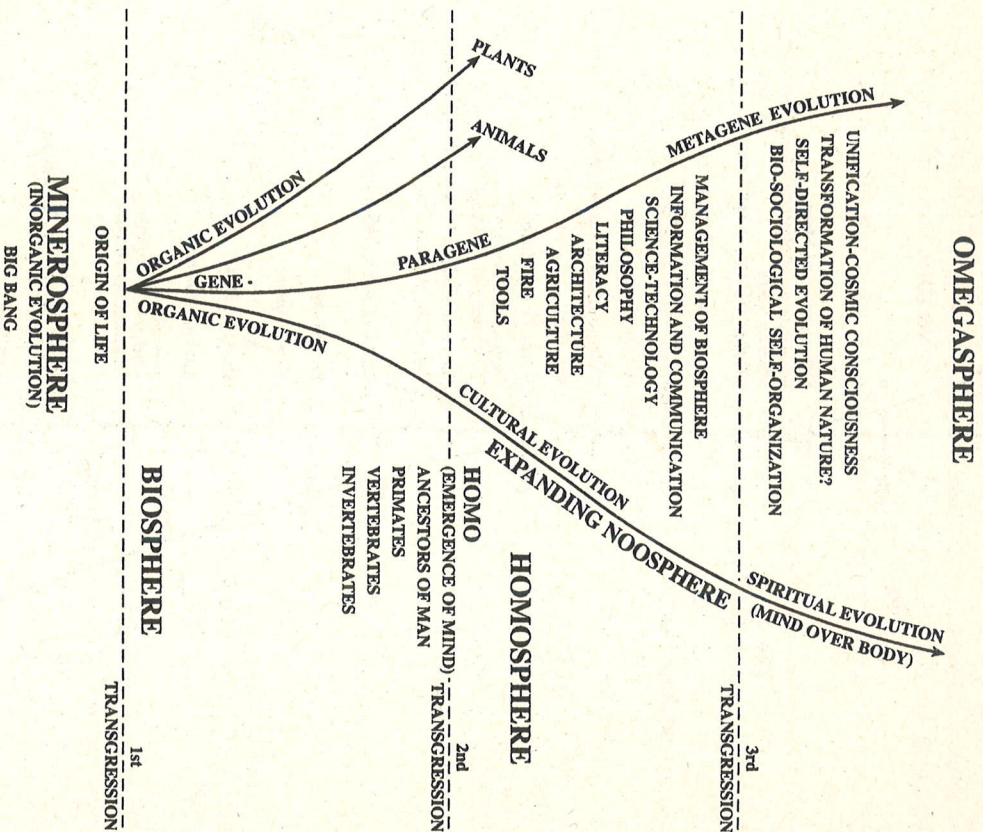


Figure 2



Deep Ecology – Quality of Life – Gaia

(An Alternative from the Viewpoint of Ecophilosophy)

by Klaudius Vicenik

The term "Deep Ecology" emerged 25 years ago. What does it mean to us today? Deep ecology is a movement that looks for new harmony and balance among individuals, communities and the natural world. The eight points of the Deep Ecology movement program, postulated by Naess in 1989, are discussed. In conclusion, there is a need for the reorientation of the values of human civilization from Ego to Eco. Consumerism and anthropocentrism should be replaced by biocentrism.

Two fundamental beliefs of twentieth century thinking are shown to be myths: the growing standard of living, and the "invisible hand" of the market. They are confronted with the basic question of quality of life: "How are you really doing?". Humanity's system of values is really in crisis now. The quality of life is demanding radical changes in values orientation and thinking. The three most important system regulators of personality should be cultivated: wisdom, conscience and moderation. Buddha said the same 2500 years ago. Today, Buddhist environmental ethics is still based on ideas of non-violence, moderation and love for all creatures.

The revitalization of Gaia, and Orphic traditions, are explored. A deep understanding and acceptance of a new hypothesis about the living planet – Gaia – could also contribute to a radical transformation of human values and behavior.

Several concepts that experts carefully avoided or were embarrassed to use until recently are now accommodated in scientific disciplines. Among them are also the concepts deep ecology, quality of life, and Gaia.

Deep Ecology

We are at a crossroad. We have been there for quite a long time. At the beginning, there was just ignorance (we had no idea about being at a crossroad) supported by its sister, indifference ("it doesn't concern me"). Now, however, we have found ourselves in a corner. Cars go too fast, there are too many of them and pedestrians do not know how and when to cross the road. Sheep in Australia are going blind. The effects of El Nino are being felt even in this country. We witness irreversible deterioration not only

in the state of nature and the environment, but also of almost everything else – the crises in the value system, culture and civilization. Maybe, the crises will help us – through envisioning the catastrophe – to open eyes towards the sources of meaningful life that we ignore or that were degraded by our way of life. One of the definitions of ecology says that it is an interdisciplinary scientific discipline exploring the living conditions of organisms and the interrelationships among themselves, and their living and non-living environment. The methodology of ecology is then very broad: everything is connected with everything, and from that a philosophy develops. *Ecophilosophy* tries to cover an immense area of connection. Thanks to the Norwegian philosopher Arne Naess, a more intimate *ecophilosophy* – *ecosophy* – was born.

Sophia – wisdom – doesn't have scientific ambitions. It rather evokes an idea of understanding and intimate knowledge. Naess is also the father of the term *deep ecology*. We had a chance to come across this concept for the first time in 1973 in his article *Shallow Ecology* and the All-embracing Deep Ecological Movement. Deep ecology is a program that strives for new balance and harmony among individuals, communities and the natural world that all of us desire deep in our souls. But deep ecology also explores the reevaluation of how we perceive and form this world. Deep ecology emphasizes the principle of equality of all living things. It goes beyond anthropocentrism, which finally results in the deterioration of the quality of life, which in turn depends on the deep satisfaction that we draw precisely from being united with all living forms. Deep ecology is a movement rather than a discipline; therefore, it must have a program consisting of value-related priorities – norms, rules, imperatives – all of which deserve to be underscored. The current goal of the deep-ecology-movement is to bring people who make decisions about the environment into a discussion about values and priorities. Naess (1989) defined an 8-point agenda of the deep-ecology-movement (*the notes in the parentheses by K. V.*):

1. The value of living forms is independent of their usefulness from the viewpoint of narrow human interest.
(*Let the river live! Gaia! Suffrage to animals!*)
2. Diversity and variety of life have their intrinsic value – they are values in themselves. (*Diversity is a wealth!*)
3. A human being has no right to confine this diversity and variety.
(*To declare at least once what humankind has no right to!*)

4. Intervention of man in nature has become unbearable and the situation is still getting worse!
(*That's a statement, a record of the course of the catastrophe.*)
5. Reduction of the number of people on the Earth.
(*Slovaks and the surrounding nations are also responsible in this regard.*)
6. Considerable improvement of living conditions is impossible without a change in politics as politics influences technical, economical and ideological structures.
(*Consumption and waste are still a matter of prestige. Nature is not any lobby group. However, nothing but pressure works with politicians.*)
7. Change in thinking lies in the recognition of the quality of life instead of the material standard of living.
(*More about this below.*)
8. Those who identify themselves with the 7 points listed above are obliged to directly or indirectly participate in the implementation of the necessary changes.
(*This item provides more open space for various opinions on what needs to be done first and what later, what is most urgent, what is necessary, and what just needs to be done.*)

It is clear from this program that deep ecology touches all important problems of the present time: personal, economical, philosophical and political. The goal of the representatives of deep ecology is not subtle reforms of the present-day society, but the *fundamental reorientation of the whole civilization*. Which political party would dare include these ideas in its program?

The Main Ideas Somewhat Differently

A deep-ecology approach requires changes in thinking of the "lord of creation".

It assumes a change that Naess calls **self-realization**. From the development of an individual the development of the whole planet is built. Though self-realization emerges from the self, it is not focused on the self. Orientation on the self causes society to disintegrate into individual units, each of whom then takes his or her own way, lives a life that is not fulfilling, and results in destruction. Therefore, Naess insisted on developing the true self without focusing on it. The true self should be developed so that it includes other people, other species, and all of nature. Self-realization

shouldn't be understood just in the sense of self-fulfillment but rather self-understanding. It's an active process. Self-understanding shows the direction we should follow. Thanks to it we see our actions in the context of a bigger whole. Life is the center of everything. One should also be aware of the direction that takes us from focus on ourselves to detachment from our egos. Self-knowledge would be also useful in this process. We can choose identification, wholeness and self-realization, or alienation, partiality and self-rejection. Unless a human being is not to be replaced by something else, he or she has to stop fighting against nature. We have to develop a new nature-oriented philosophy. This is not a return to some kind of primitivism. The opposite is true – a perfectly balanced ecosystem contains far more complicated relationships than humankind has known until now. Action should be taken! Passivity has terrible effects and a negligent attitude in certain situations deserves punishment. The trouble is that it is not sufficient just to take "some" action – it's necessary to take action with wisdom and respect for moral principles. Individuals should be brought up to have the ability to act with wisdom and integrity once they are mature. It is necessary to begin an information campaign and to pursue ecological awareness. Also, setting a personal example can assist the liberation of individuals and the whole society from the pressure of consumerism, due to which even honest and wise politicians can implement ecological measurements only with great difficulties. A change in thinking requires an organized effort to change the structure of society. However, politicians are afraid of these ideas as is "the devil of holy water".

In the seventies, the conviction prevailed that it would be necessary to carry out a change of life-style in highly developed industrial countries. Basically it was clear how an ecologically responsible life should look like: anticommunism with an emphasis on energy-conservation, active support of self-help and self-sufficiency, development of public transportation and cycling, spending more time in nature, family planning, and bio-agriculture. However, "the advanced" world has suffered depressing losses: further development of individual and freight automobile transportation along with the decline of public transportation (especially railways) and the demoralization of society prompting wastage and valuing consumerism. Today, many of these ecological principles need to be implemented almost from square one. And the world goes round – spinning toward a chasm. It is natural (though not easy to understand) that deep ecology doesn't favor democratic decision-making from the position of the majority, for it is

particularly sensitive towards minorities. From the view of the quality of life, the democratic ideal of the majority limps. People are different and their life interests and values must be respected – they cannot simply be outvoted. This actually relates to all of nature.

Quality of Life

We live in a period of myths, even if we do not want to admit it. The first one is the myth about the growth of the quality of life. In fact, the material standard of living (the subject of this myth) doesn't necessarily have to relate to the quality of life. Turning from the myth of the growth in the standard of living towards the principle of quality of life must seem very dangerous to an "economic machine". The myth of the increasing standard of living is conjoined with the myth of the "invisible hand" of the market (which strongly reminds one of simplified religion: it has its believers, its clergy, rituals, dogmas, idol of perfection). In reality, this hand has slightly pushed us into the cogwheels of the machine that we considered our servant. One of the most sorrowful examples of the "invisible hand" of the market is the state of the tropical rain forests. The whole world (including the entire community of experts, scientists and politicians) now knows and admits the catastrophic mistake of clearing and burning these areas. However, the economic machine continues in its disastrous work while we are just helpless spectators. Public opinion is used as justification for the most frequent arguments put forth by the mainstream politicians and powerful groups: reduction of unemployment, more arable land, more medicine, more highways, cheaper gasoline, higher salaries... The fact that these requests are frequently mutually exclusive is tactfully kept quiet. Public discussion about fundamental values is not considered important. However, every person has some value system which he occasionally compares with reality. Here arises the most common, every-day question regarding the quality of life: How are you doing? Before I answer (it's typical for our fellows to respond: "Don't even ask me!") I should set on my internal computer and analyze individual items of my values: my family, my health and that of my children and parents, financial security, education, job, work (enjoyable, useful, well-paid), lifestyle, workload, traumatizing experiences and critical life events, various (conscious) dependencies, free time, vacation, hobbies, political system, environment, value orientation and various feelings. A complicated system of measurements with positive or negative values which are weighed on different scales. All this is under the roof of a personal

value system. The more perfect the harmony between my value system and reality (that will be reflected in the answer to the question laid above), the higher the quality of my life. The value system is right now a key problem, because it is the very expression of the deep crisis of humanity from the viewpoint of its way of life. What should I want, what should I worry about and what doesn't have to trouble me? A lot of answers are provided by contemporary "western" psychology and Christian ethics, but especially by recently re-discovered Buddhist ethics (Badiner, 1990, 1994). Similarly, as in deep ecology, a radical change in value orientation and thinking is required. Yet, can humanity change? Kovac (1996, 1997) tried to explore a multivariate value system of humanity and the chances of it changing from the standpoint of psychology. From the viewpoint of history, the answer is negative. At the contemporary state of crises, Kovac admits the possibility of a positive answer if as many people as possible successfully undergo a primary change of personality. From the viewpoint of the goal – sustaining life on this planet and development of humanity as a part of it – the most important system regulators of a personality should be cultivated – **wisdom, conscience and moderation**. These are in fact ancient virtues that need to be revitalized. Buddha came to the same conclusion a long time ago, indeed.

Gaia

A stay of several weeks in Crete allowed me to set out on a journey in the footsteps of the mathematician Ralph Abraham, one of the pioneers of a theory which is presently highly developed, the theory of chaos and non-linear dynamic processes. These are the very methods that have the best chance to depict the complexity of the functioning of ecosystems. But let's look slightly back into the past. Ralph Abraham also wanted to draw new inspiration from history in Crete (Abraham, 1990). In the Orphic tradition of ancient Greece, three divinities came to existence around 800 BC: Chaos, Gaia, and Eros. The poet Hesiodos also speaks about this triad in a poem "About the Origin of Gods". Later on, the Pythagoreans taught that from Chaos evolved Cosmos which means order and world harmony. Chaos, then, even in Pythagorean times was considered something rather negative which needs to be fixed or put in order. Eros here is a natural god that originated together with Gaia, not the god of love (Aphrodite's son) as he was known later. The tragedy of Greek mythology made Gaia – mother Earth – a contradictory, though popular goddess worshipped in Athens. She was worshipped mostly by the elderly as the goddess of life as well as the

goddess of the underworld (and thus the goddess of death, because all creatures born from her ended in her). However, Greek mythology is patriarchal, what we would say about the revitalized symbolism of ancient Chinese Tao – yang. For the masculine element was the one that wanted to set up order and didn't like Chaos. Yet Chaos wasn't disorder, it was the very opposite: a secret fount, an inexhaustible source of productive fermentation and agitation, which is of course hardly manageable. Similarly, Indian mythology mentions these three divinities – Chaos, Gaia, and Eros – (although with different figures) as the three cosmic principles. Chaos is the principle of the Heavens, Gaia is the principle of the Earth and Eros is the principle of the Spirit. Chaos wasn't a masculine principle. This was probably decisive during the divine governmental overthrows in ancient Babylon and Greece. Still in Hesiodos' works, both Chaos and Gaia are of feminine gender and Eros is androgynous – perfect balance of both masculine and feminine principles.

Imaginative tension between the Heavens and the Earth is a dialogue between the Soul and the Body complemented by the sparkling consciousness of the Spirit. These together are the Soul, the Body and the Spirit of the world, which reflect themselves on the planetary level as well as in every molecule and at all levels, everywhere. Here the Crete Pantheon, headed by the goddess Mother, remained miraculously undisturbed by the new, ordering masculine principles that also took over the reign in Babylon. There, Tiamat (also a goddess of chaos) was replaced by Marduk who set down masculine law and order. Why do we speak about that so much? Because we are about to finish the 4th millennium of the reign of the masculine principle. Into its absolute sovereignty (that would probably have caused the destruction of the world long time ago) something really interesting has sneaked in – a wheel. For the wheel represents the cyclic principle. It is contained in the "coat of arms" of the ancient Indian (and still "living") god Shiva, it is an emblem of Buddhism, a symbol of Tao, and we can also find it under Minoi hatchets. Europe and the U.S., although they are Christian continents, also promoted wheels – and right away four of them – to the rank of divinities. Connected by sheet iron and steel, and equipped by driving force, windows and the roof, they represent the longed-for male order and rule over things. The wheel is seemingly a symbol of eternal order, that is of the male principle. However, the circle and cyclicity are in reality neutral. Moreover, as we presently know, there is no cycle that is absolutely regular; these words depict the whole present day science about chaos which functions according

to some, though sometimes very mysterious rules. The Easter holiday is an example of an irregular regularity. Here also Christian churches accommodated to Mother Earth, Father Sun, and Brother – Sister Moon. The number of leaves on a tree, the shape of a snow-flake, a tidal wave, a thumb-print; everywhere is imaginative irregularity and hidden order. Nature doesn't exalt either the male or the female principle. If nature followed humanity in its "male" efforts, we wouldn't get over the consternation. Every morning and every night we would watch a relentless cosmic fight of Day with Night. Nothing like that happens. Day passes on the reign to Night with majestic calmness and in a few hours Night passes it back onto Day. And this majesty has been occurring continuously for billions of years. Among the typical features of Orphic tradition belong: vitality, animism, reincarnation, teaching of karma, vegetarianism, love for all living things, mystical enlightenment, sexual and ascetic rites, feminism, and others. Revitalization of these aspects is positively charged at present and it didn't happen accidentally. Among the fruits of the Orphic tree – in a contemporary culture – are also: fascinating scientific teachings about chaos, a hypothesis of Gaia and the expansion of green Buddhism in North America and Europe. At this point I refer to the complete works of James Lovelock, who "reincarnated" Gaia – the living planet – and also to a tiny book by another kindred spirit, Nancy Clark, who retains a little flame of optimism when looking at the future of the Earth and accomplishes the challenge of recognizing the complexities of humanity and this planet through the practice of meditation.

What can one say in conclusion? That maybe the beginning of wisdom, consciousness and moderation will come at the point when we (internally) successfully cope with the fact that if we want to understand things of this world and ourselves, we need to accept the fact that it is irregularity, seeming disorder and "chaos", and liberation from voluntary and forced limitations, exact rules and laws, which opens windows to creativity and real solutions. We need to be kind towards our Mother Earth, to be thoughtful of the silent sounds of nature, ghosts, divinities, to honor and preserve all living beings as well as creations of nature, to re-learn to enjoy each moment of a day. The ancient people in Crete must have known this and therefore they lived happily for a long time until the "higher will" – requesting a change – took the floor. Our western civilization has been doing so far everything in order to self-destruct, even without intervention or punishment from higher forces. But I remain an optimist. If more and more people are

able – in a short period of time – to understand and live according to new paradigms, maybe we will not be ashamed of the title *Homo sapiens* in the third millennia.

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Towards a More Efficient and More Environmentally Oriented United Nations System

by Josef Vavroušek

Humankind has to solve many global problems which are mutually dependent. This is why there is no real chance that they can be solved separately or by the effort of individual countries. The need for co-ordinated global scale action is thus more and more urgent.

The United Nations system has played a very important role in the prevention or solution of world-wide as well as local problems during the last decades, and with the end of the Cold War, we have had a chance to activate its full potentialities for the first time. This is timely because at the same moment, new problems have emerged, among which environmental insecurity is prominent. At the global scale, it is composed of uncontrolled population growth, unbalanced economic development leading to excessive consumption in some countries and deep poverty and even starvation in others, rapid deterioration of the human environment and vast depletion of nature, weakening some of its crucial life-protecting systems.

The UN system is the natural framework within which to tackle these global security issues, but it needs considerable reform and improvement. The charter framework of the UN system, established in San Francisco in 1945 just after the end of the Second World War, has proved to have remarkable durability although no mention of the environment appears in it: the issue simply was not salient at that time. Within it new institutions have been created, one of which was the United Nations Environmental Programme (UNEP), established in 1972. This add-on approach widened step by step the scope of UN operations and thus, on the one hand, allowed the organisation to adapt to new situations, but on the other hand tend to the creation of too many different institutions with very small – if any – mutual links. The existing UN structure is thus too ineffective and also too expensive, in my opinion. The traditional approach of extending the list of UN agencies and other institutions seems to be inefficient. Disappointment with performance has contributed to support for the dictum “no new institutions within the UN”, which now prevails.

The vast new challenges for the UN system need new solutions, however. One possible blueprint for such a deep change in the UN structure I proposed in the context of the Rio Earth Summit. I believe that the moment is ripe to reshape the UN system and to focus it upon the new security agenda. The revised UN structure should be both more decentralised, and therefore better able to tailor solutions to specific problems, and also more efficient. I think that the future structure of the UN system should have four specialised subsystems, which would form its primary structural framework (see also Table 1), to increase the efficiency of the UN system without creating a highly centralised bureaucracy with a monopoly on power. I suggest the following criteria to form the new structure:

- balanced awareness of the spectrum of global problems competing for consideration in the UN system;
- precise division of functions and responsibilities within the UN system, (similar functions in the present system should be integrated and unnecessary ones should be terminated);
- decentralisation of the activities – decisions should be made as close to the problems as possible so that they may be based on knowledge of the specific conditions while at the same time being based on a common policy set by the General Assembly; and
- efficient feedback built into the system to allow the early identification and correction of problems which may arise during the planning and conduct of a UN operation.

The four sub-systems are:

A UN Security System seeking to prevent or resolve peacefully international conflicts, governed by the UN Security Council;

A UN Economic System promoting balanced global economic development through appropriate financial, trade and other measures governed by a UN Economic Council;

A UN Social System concentrating on the support of culture, education, health care, social security and similar activities headed by a UN Social Council; and

A UN Environmental System focusing on the protection and restoration of Nature in general and the human environment in particular, headed by a UN Environmental Council.

Table 1 Main pillars of the UN system and their interactions

Main relations - the interaction of influences	(a) UN Security System	(b) UN Economic System	(c) UN Social System	(d) UN Environmental System
(a) UN Security System		influence of instability on economic development	influence of instability on the social human culture	influence of instability on the quality of the environment
(b) UN Economic System	influence of economic crises on security		influence of economic crises on human culture and health	influence of economic crises on the environment
(c) UN Social System	influence of social unrest on security	influence of education on economic development		influence of human value in relation to Nature
(d) UN Environmental System	influence of environmental deterioration on security	influence of environmental deterioration on the efficiency of economy	influence of environmental deterioration on human culture and health	

Each of these four specialised pillars should be autonomous as they concentrate on a different aspect of the sustainable development of our planet. At the same time they must work closely together since all real problems are mixtures of these areas. However, this tension between working together and maintaining their own point of view will increase the probability of optimal decisions when they confront the complex problems of the world. It will also promote efficient implementation of the decision by specialised institutions once a course has been decided upon.

Anyone familiar with the UN will recognise that my plan is evolutionary rather than revolutionary: (a) exists already, and under Marrack Goulding's leadership, peacekeeping is in vigorous development; (b) and (c) involve boosting and dividing the functions of the present ECOSOC (Economic and Social Committee); while (d) is really new.

Splitting the Economic and Social Council would help to solve the complex problems whose inner structure is so interrelated that they really require the distinctive points of view of the four separate pillars to analyse and solve them synergistically.

Table 2 The main areas of co-operation between two proposed structures of the UN system

Primary structure	Secondary structure		
<i>UN Security System</i>	<i>UN/African System</i>	<i>UN/European System</i>	<i>Overall Mission</i>
	African security	European security	Global security
<i>UN Economic System</i>	African economic development	European economic development	Global economic development
<i>UN Social System</i>	African social and cultural development and health care	European social and cultural development and health care	Global social and cultural development and health care
<i>UN Environmental System</i>	African nature protection and environmental restoration	European nature protection and environmental restoration	Global nature protection and human environmental restoration
<i>Overall Mission</i>	Sustainable African development	Sustainable European development	Sustainable planetary development

The new UN Environment System (d) would subsume the existing UN Environment Programme, and be much enhanced in status: accorded equality with the other UN pillars. In fact, one of the most urgent reasons for the amplification of this office is to provide a counter-balance to the other three parts in the UN System. This organisation should have a working institute on the ground as the place in which to debate environmental policy: a sort of environmental staff college for the member states. My new UN structure would absorb the majority of the existing UN organs, programmes, organisations and institutions.

The requirement to decentralise the UN system activities and thus to increase their efficiency on the basis of precise knowledge of the situation in different parts of our planet, leads me to propose a secondary "cross" structure of the system. This secondary structure should be organised on a continental or regional basis, following a well recognised principle in the UN Charter, and would be developed from the existing regional Commissions. But I would increase their number. There should be UN Commissions for Africa, Europe, North America, South America and the Caribbean, Eastern

and Western Asia, Australia and Antarctica. Each of these Commissions would concentrate on the four principal themes: security, economy, social affairs and the environment, corresponding to the four pillars of the primary structure of the UN system. The two different structures would form a robust "matrix" structure, which would enable it to respect the global consequences of specific problems as well as their geographic dimensions (see Table 2).

There are several ways to strengthen the "fourth (environmental) pillar" of the proposed UN system. The most promising would be to establish a UN World Environment Organisation (UNWEO) to co-ordinate environmentally oriented efforts on a global scale. The future UNWEO could be based on the existing UNEP structures. The blueprint for UNWEO should adopt a "flat" institutional network with a comparatively small co-ordinating centre which could be developed from the existing UNEP secretariat in Nairobi. It would relate to autonomous continental environmental centres following the same general "planetary" strategy which could in turn be fashioned out of a merger between UNEP's regional offices and the UN Economic Commissions for each continent. The scope of activities of different continental Environment Organisations could be very distinctive – probably broader in continents divided into a large number of countries (such as Europe), and narrower in the continents with a small number of countries.

These proposed developments of the structure of the UN are just one of the possible blueprints. But we shall not advance unless we dare to think in concrete terms like this. It is important to start focused and systematic efforts in this direction.

Searching for Human Values Compatible with the Sustainable Ways of Living

by Josef Vavroušek

Development of Human Society in the last several hundred years has been characterised by a number of basic and still deepening contradictions. It has brought some positive trends, such as a rapid growth of technical and scientific knowledge, which increased substantially the amount of information about the world in which we live and led to a higher standard of living in most of European, North American and some other regions. It has brought improvements in health care, limited the impact of infectious diseases and therefore lowered the death rate in most of the world. An increasing number of countries assert democratic political systems and ideals of human rights and freedoms.

We must, however, also consider the negative features of this development, with dangerous consequences. High, and still growing consumption of the "Northern" and some "Southern" countries is among the most important of them, connected with rapid deterioration of natural resources and production of enormous amounts of waste; 20% of the population thus consumes about 80% of raw material and energy resources. Most of the "Southern" (and some "Northern") countries population lives in poverty, more than 780 mil. from the total number of 5.5 bill. world inhabitants even under the level of absolute insufficiency – each minute 28 people die from hunger and people attempting to survive destroy surrounding nature. Expansive development of the Euro-American culture is leading to the weakening or even destroying of national regional cultures, which means irreparable loss of cultural diversity of human kind and restriction of its ability to react efficiently to new circumstances – that leads to the growing fragility of human society.

All these mentioned processes contribute to the rapid deterioration of nature and human environment on global, regional and local scales. Air pollution leads to acid rain, ozone layer depletion and climate changes. Forests lose their vitality, trees are cut down, soil is desertified due to erosion, growing salinity, water content lowering, and humus loss. Humans have negative – and irreversible – impact on natural resources, the genetic pool and Earth's life-supporting systems.

Particularly dangerous is the unprecedented scale of the mentioned negative changes, and the speed with which they occur. That is closely connected with the technical capability to change nature and with "globalization" of human civilization (Earth as the "Global Village"), which is the consequence of the information dissemination and public as well as freight transport speed. One of the reasons is also exponential Earth population growth; the fact, that it doubles once in 40 years is a warning itself. The danger of such a development is even more threatening because it is regionally unbalanced – birth rate is greater in the poorest countries, and so deepens the mentioned problems.

For the first time in history the whole human society, together with uncountable number of other organisms, is endangered. This is unprecedented situation: up till now a decline or even disappearance of a civilization concerned just a separate region – as were ancient cultures which had lived between Euphrat and Tigris.

We are near the crossroad – if not past it – when a reevaluation of the whole past development is critically needed. It is in the long term perspective obviously unsustainable, and could lead to the escalation of social tensions in the world, the consequence being a growing violence, and a destruction of the global environment vital for man and other organisms. Any delay could trigger uncontrollable processes. And potential attempts of some countries or regions to isolate and protect themselves by new, now electronic "curtains" and thus preserve their prosperity is not only immoral, but also short sighted, convicted to hard failure. Awareness of the critical need of basic, although very differentiated, changes is gradually increasing in all parts of the world, although motivated by different factors. The key conclusion of the United Nations Conference on Environment and Development (Rio de Janeiro, June 1992) therefore was the Strategy of Sustainable Development, as a blueprint for the future orientation of mankind.

Sustainable development – or perhaps more precisely sustainable way of life – is concerned with the search for harmony between man and nature, society and its environment, so that we should achieve the ideals of humanism and respect for life which searches for balance between the rights and freedoms of every individual and his responsibility towards other people and nature as a whole, including the responsibility towards future generations. We should accept the principle that freedom of every individual is limited by the same freedom of the other, but also by the principle to avoid a deterioration of nature.

If we want to find the sustainable ways of living, we should analyse recent unsustainable trends, which have the character of quantitative growth connected with a number of deep discrepancies. We should attempt to build on ideals that are compatible with visions of a sustainable way of living, that could initiate a working-out of this vision, support its realisation, and at the same time avoiding such activities that are raising or deepening the huge problems of humankind. A part of such an analysis should be an identification of all important factors negatively or positively influencing current development, a support of the positive factors and their supplementation in all lacking areas.

A common feature in understanding people's behaviour is, in my opinion, the general criteria used by them in evaluation and decision making processes. These criteria are human values, which express individual or collective perception of life, values stipulated probably partly biologically (most important genetically), partly having their roots in specific human cultures. If the mentioned hypothesis is right, then an analysis of the development of human values in different parts of the world during the last decades and centuries could help us to find the roots of the recent ethical crises as well as human values compatible with sustainable ways of living.

Searching for human values suitable for sustainable living we should start by analysis of values which dominate in our Euro-American (or North-West) civilization. Not only because it is the only way how to change our behaviours and thus solve problems of our region. We have to take also into account that our civilization affects very substantially the whole planet. When we have discovered the unsustainable character of many global trends, we have also to admit a crucial share of Euro-American value systems of this frustrated development. By starting at home we could help all humans.

The value system of Euro-American civilization develops in time and is relatively non-homogenous, with regional differences and varieties of values typical for specific social groups, for "real capitalism" as well as for former "real socialism". But even though I suppose, we can distinguish in our civilization such general value orientations which have directly initiated appearance and growth of all mentioned social, economic, environmental and political problems of our times. But, at the same time, we could discover in the roots of our Euro-American civilization values compatible with ideals of sustainable living, brush them up, develop and enforce them.

The following brief survey is a working hypothesis, which tries to describe the most important values of our Euro-American civilization contributing

towards unsustainable trends (values A), along with alternative values orientations (values B) which could lead us in a sustainable course – some of them have been emerging especially during recent years. It is a very simplified description of an immensely complicated subject but nevertheless, I believe it could contribute to a better understanding of our situation and initiate further discussions.

Let me analyse the basic relations of our Euro-American civilization towards human life and nature:

1. Relation of man to nature

A. Reality: Predatory, exploitive, relation to nature, which is concerned as bottomless resource of raw materials and passive “playground” for human activities, disrespectful to natural limits of carrying capacity of landscape; still growing orientation toward non-renewable natural resources and emissions of wastes, often very dangerous.

B. Alternative: Awareness of relation to nature, respect for life in all its forms and to nature as a whole, use of the landscape within limits of its carrying capacity, orientation on renewable natural resources, minimization of wastes and their recycling.

2. Relation of human individuals to society

A. Reality: Two extreme approaches:

- a) one-sided emphasis on individualism and competitiveness (typical for the “real capitalism”) based on assumption, that egoistic behaviour of any individual and his competition with all others is “automatically” mostly beneficial not only to him, but also to the welfare of society as whole (A. Smith’s “invisible hand”). This approach has on one side enabled the explosive economic growth of Western Europe and North America, but on the other side has led to the decline of personal responsibility for common matters and to the release of relations to other people.
- b) one-sided emphasis on collectivism (typical for former “real socialism”), where all interests of any individual should be theoretically subordinated to the collective interests. But in

reality all powers had been concentrated in the hands of a small group of people or even a single person, who represented the communist party, without any control. At the same time the immense majority of the people had no real right to participate actively in public affairs and lost many other human rights and freedoms. This led to a huge loss of self-confidence and a feeling of shared responsibility for the development of the society and its environment. The results were on one hand a common state of “collective irresponsibility” that led to the apathy of powerless or, on the other hand, the conviction of some independent people, that the whole system should be radically changed, if the decomposition of the society and destruction of nature should be stopped. Fortunately, in 1989 in all European “socialist” countries the second approach prevailed.

B. Alternative: Balanced emphasis on an individual and a collective, which should be not only our family, community, nation or state and culture, but also a humankind as a whole. Self confidence of every single individual based on free decision-making, connected with the cognition of interdependence of every person with all other people. Emphasis on love, solidarity and altruism as driving forces of human behaviour. Supplement of competition with cooperation in the name of common human values and goals.

3. Relation to the time and sense of history

A. Reality: Fascination and obsession by the idea of quantitative growth; one of the “engines” accelerating the process in the society is the common conviction that it is the growth of selected criteria (e.g. the GDP on the national level or the incomes or earnings on the personal level) that these are the measures of its success, and healthy development and even happiness. In the world of limited resources, such an orientation is not perspective and in rich societies even useless: no growth can continue for an unlimited period of time, sooner or later it will reach objective frontiers.

B. Alternative: Emphasis on qualitative development of human society, oriented first of all on improvement of the quality of life and human relations, development of science, culture, spiritual and intellectual life and cultivation and use of people's abilities, because human creativity is perhaps the only unlimited natural source. But the prerequisite of this orientation is certainly the saturation of basic human material needs.

4. Relation to the sense of our life

A. Reality: Hedonistic orientation and consumer life style, where the main sense of life is seen in achieving higher and higher comfort (which is often paid by growing stress) and higher satisfaction of material needs, which have usually no natural limits. The whole mechanism of market economy with the help of aggressive advertisement based on brainwashing practices is focused on the creation and stimulation of still newer and newer material needs in situation, when all basic needs of almost all people living in Western democracies are satisfied for a long time. The amount of money and a quantity of luxury consumption became the universal measures of success.

B. Alternative: Emphasis on quality of life, deliberate modesty and renunciation, self-denial of superficial things. Just these values stayed by the cradle of the Jewish-Christian civilization, together with love, solidarity and altruism and a return to them is extremely important for sustainable living.

5. Relation to freedom and responsibility

A. Reality: One-sided emphasis on human rights and freedoms, erosion of personal co-responsibilities and lack of intergenerational awareness. Underlining of human rights and support of human freedoms in the period of Enlightenment was extremely important for the development of European and American democracies, especially in sharp contrast with the previous serfdom of medieval times, but it was not accompanied by

a corresponding sense of responsibility for common public affairs, and in the "real socialism" not even by responsibility for our own lives. In the praxis of "real capitalism", personal freedom is often reduced to the freedom to consume material goods.

B. Alternative: Establishing symmetry between human rights and freedoms on one hand, and human responsibilities on the other hand, with respect to other beings and to nature, and to develop both.

6. Relation to our knowledge

A. Reality: "Pride of the reason", considered in the overestimation of the scale depth, reliability and complexity of our knowledge and experiences, one-sided reliance on intellect, rationality and simple casual thinking, lack of our ability to foresee and shape future development. Extreme overvaluation of our knowledge was typical for centralistic command economy of former "socialist" states, but we can see it also in Western societies.

B. Alternative: Adopt precautionary principle, exclude all activities, possible negative impacts of which could not be judged with sufficient reliability in alltime horizons, supplementation of rational thinking by institution, bring together sciences and arts, intensive support of scientific research development and education.

7. Relation to our lives

A. Reality: Weakening of the human instinct of self-preservation, alienation to our own lives, lack of feedback. Man often deliberately behaves in such a way, which destroys the environment and endangers his life or lives of his relatives; he smokes, destroy forests and spoils rivers.

B. Alternative: Awareness of human activities negative impacts, evolution of mutual links of events in space and time; a precondition is again the systematic education and informing of the broadest possible groups, and improvement of institutional feedback.

8. Relation to future generations

A. Reality: Preference of short-term goals over long-term permanent ones following principle "carpe diem", life at the expense of future generations due to overexploitation of natural resources and spreading of wastes.

B. Alternative: Awareness of the long-term goals and consequences of human activities, based on precautionary principle and development of our knowledge, responsibility for future generations.

9. Relation to the other opinions and to the other civilizations

A. Reality: Low respect for the other opinions, ideological, religious, racial or other intolerance, solving of conflicts by force and violence. Often also sharp underestimation or even ignorance of the human civilizations and cultures, based on the unjustified assumption that our Euro-American civilization is superior to all others, sometimes also our aggressive behaviour against the other civilizations, by military means in recent history, and by economic and cultural instruments now.

B. Alternative: Mutual tolerance, empathy for situation of the other people, cultures or civilizations and their values and goals, attempts to use the experience, knowledge and wisdom of other cultures. Political, economical security and other global mechanisms enabling cooperation and mutual enrichment of different people, states and civilizations, preserving their uniqueness/uniquity and autonomy.

10. Relation to the common affairs

A. Reality: Resignation on common decision making, passivity, brainless acceptance of foreign patterns, monopolization of political and economic powers in hands of small number of people, leading to an infantilization of the human solidarity and to a decrease of its ability to govern future development.

B. Alternative: Develop participative democracy supporting creative activities of all citizens, decentralization of powers with effective coordinational and feedback mechanisms, preventing the abuse of political, economic and other powers. All the people can participate directly on decision making presses concerning future value orientation of the society, even if they have not enough information and knowledge to solve specific professional problems.

The short above analysis is a work hypothesis which needs to be carefully revised and amended. But it suggests, that some of the value orientations on which our recent Euro-American culture (values A) is based, are a blind alley. But at the same time I propose human values, which could be compatible with sustainable ways of life. These values B are not "new", artificial constructs. Almost all of them have their roots in Greek-Roman-Judaic-Christian foundations of European culture. We should "rediscover" them and supplement or modify in those areas where it is necessary due an unprecedented increase of humankind's ability to destroy nature as well as itself, or where it is possible because of development and deepening of human knowledge.

The type B values could have the real influence only when people will locate them rather high on their hierarchies of individual values. These values should have to be incorporated into legislative, institutional, and economical arrangements of the human society, as shared values of an important part of their citizens. It is not possible to assume, that the "sustainable values" (type B) could be adopted from one day to another, by some "big leap", and the values of the type A will simply disappear or will be abandoned. We can foresee the consequent, step by step changes of the order of different human values or shifts of their relative weights in the assessment and decision-making processes of people, accompanied by feedback corrective measures and should do everything to support these trends. Because any delays of necessary changes of value orientations are very dangerous, the inertia of the recent trends is working against a sustainable future. It is the race with the time.

We do have to come back towards the basic question on the sense of life and search for answers appropriate to dangerous and rapidly changing situation. There are probably only two basic alternatives of future development. The first one is a continuity of existing unsatisfactory and

unsustainable trends, which could lead, with a high probability, to chaos and a series of catastrophes of different kinds. There is a real threat, that the period of environmental deterioration and of a decay of social structures could be very long, in extreme case could lead to degradation of humankind.

The second alternative is a systematic and quick evolution oriented towards the solution of existing problems and prevention of some new ones. The common care for our common environment perhaps could form the foundations of such an alternative. Existing substantial political, economic, national, religious and other contradictions in the world do not offer us too many changes.

I am convinced, that searching for and enforcement of values, which could lead us towards humanism and harmony of relations between man and nature is a common deal of religious people as well as people believing in man, his ability to distinguish good and evil.

Briefly on authors

MIKULÁŠ HUBA (1954), regional geographer, environmentalist, pedagogist, NGO leader. Graduated from Comenius University (1978). Huba was a member of the Slovak Parliament and served as a chairman of its *Environmental Committee* (1990–1992). He is a scientific team leader at the Institute of Geography, Slovak Academy of Sciences. M. Huba has been a co-ordinator of several projects concerning sustainability issues. He is among the leading activists of the non-profit sector in Slovakia: president of the *Slovak Union of Nature and Landscape Protectors* (1989–1993), founder and president of the *Society for Sustainable Living in SR* (since 1993), co-founder of the *Slovak Association of the Club of Rome, Transparency International Slovakia, Third Sector Gremium* and others organizations. Member and activist of several international NGOs and co-founder of the *Global Security Fellows Initiative*, University of Cambridge (1993) as well as of the *Values for a Sustainable Future*, European Ecoforum Issue Group (1998).

Author, co-author or editor of 15 books, including the well-known Bratislava/loudly.

IAN KELLER (1955), studied history and sociology. He is now professor of sociology at Faculty of Social Sciences, Masaryk University, Brno. J. Keller writes in particular about the relationship between sociology and ecology and about environmental issues. His popular books deal with the consequences of economic and political decision-making and its effects on nature. He has published twelve books, among others: *Wrong society* (1992), *To the Bottom of Wealth* (1993), *Sociology and Ecology* (1997), *Our Journey to Ancient Ages* (1998).

ERAZIM KOHÁK (1933), author of almost 20 books and numerous articles. Since 1995 he has been an emeritus professor of philosophy at Boston University, where he taught for 35 years, and since 1991, a professor of ethics and ontology at Charles University in Prague. Personalist and phenomenologist, but first of all socially and ecologically engaged philosopher, continuously evolving the search for unity of theory with actions based on it, following his great countrymen, Jan Amos Comenius, the "Teacher of Nations", Thomas G. Masaryk, philosopher and the first Czechoslovak president, and Jan Patočka.

Koňák lived between Bohemia, his native country (and, since 1995, once more his homeland) and the USA, his adoptive country for almost half a century. He worked systematically toward political change in Czechoslovakia. Since 1989, he has been very active in mass-media, as well as promoter and activist of the environmental movement in Czechoslovakia.

HANA LIBROVÁ (1943), studied biology and sociology. She is now professor of sociology at Faculty of Social Sciences, Masaryk University, Brno. Her research activity concentrates at sustainable lifestyle. She is the author of the books *Social Need and the Value of Landscape* (1987), *Love for the Landscape?* (1988) and *The Colourful and the Green: Chapters on Voluntary Simplicity* (1994). In 1998 she founded the Environmental Humanities graduate studies at Masaryk University. She is the Head of the Department of Environmental Studies there.

JURAJ MESÍK (1962), from 1989 to 1990, he served as a Member of Parliament in the Czechoslovak Federal Assembly. From 1990 to 1991, he served as Chairman of the Green Party in Slovakia. From 1993 to the present, J. Mesík has been Director of Nadácia Ekopolis – Environmental Partnership for Central Europe – Slovakia (EPCE). In 1998, J. Mesík was elected to the Banská Bystrica City Council. Throughout his career, J. Mesík has been extensively involved in the third sector in Slovakia. From 1982 to 1992, he served as chairman of the local branch, Ekotrend, and in the Slovak Union of Nature and Landscape Protectors (vice-president 1990–1992). From 1994 to 1995, he served as a trustee for the Institute for East West Studies in Prague and New York. In 1994, J. Mesík became a trustee for the Banská Bystrica Healthy City Community Foundation.

TEODOR MÜNZ (1924), graduated from the Faculty of Philosophy, Comenius University, Bratislava.

He is a former researcher from the Institute of Philosophy, Slovak Academy of Sciences. His prior field of study was the history of European and Slovak philosophy. He is the author of 5 monographies and numerous studies and articles. Dr. Münz has translated 14 books of German philosophers from German to Slovak. During the last ten years, his priority has been ecophilosophy. His original way of thinking is reflected by his essays on philosophical anthropology.

PAVEL NOVÁČEK (1961), studied environmental studies at Palacky University, Olomouc and landscape planning at the Institute of Landscape Ecology, Slovak Academy of Sciences, Nitra. He is director of the Center for Interdisciplinary Studies, Palacky University and chairman of the Central European Node of the Millennium Project. P. Nováček specializes in global environmental issues and sustainable development. He has published six books: *Threatened Planet* (1994, together with M. Huba), *Shock from Prosperity – An Anthology of Global Issues I–III* (1995, 1996, together with M. Huba), *Strategy for Sustainable Development* (1996, together with P. Mederly), *Praise You Mother Earth* (1998), *Threatened Planet on the Threshold of the 21st Century* (1998, together with M. Huba and P. Mederly), *Crossroads of the Future – Towards Sustainable Development and Global Governance* (1999).

JOSEF SVOBODA (1929), born in Prague. As a student of Masaryk University in Brno he was arrested in 1949 for political reasons and spent a total of 9 years in 17 communist prisons and concentration camps. After that, he served in different professions. He studied biology at Charles University (1966–1968). After the Soviet army invasion of Czechoslovakia in 1968, he left to Canada. His bachelors studies were completed at University of Ontario in 1970, and Ph.D studies at University of Alberta, Edmonton. Since 1973, he has been a professor of plant ecology at the University of Toronto. Since 1970, J. Svoboda took part in or organised 26 expeditions, mainly to the Arctic, where he dealt with primary production issues.

He works on homosphere, noosphere as well as on the interpretation of evolution, has a philosophical background.

After the Velvet Revolution, he was invited by several universities in Czechoslovakia to give lectures on Arctic ecology. In Canada, 1993 elected Fellow of the Arctic Institute of North America, 1994 Northern Science Award, 1995 New Pioneers Award for Science and Technology. In the Czech Republic: 1994 Honorary membership in the Czech Botanical Association, 1995 Honorary Doctorate of Biological Sciences by Masaryk University in Brno.

KLAUDIUS VICENÍK (1940–1999), biocybernetist, scientist, philosopher, photographer, founder of the Centre for Human Development, co-founder of the Society for Sustainable Living in the Slovak Republic and the Slovak Association of the Club of Rome. A great propagator of Eastern philosophy and a practical promoter of yoga.

K. Vicensk was an internationally recognized, creative and innovative research worker of the Slovak Academy of Sciences. He was active in mass-media and public discussions. He was also involved in several structures and activities promoting democracy, tolerance, sustainable way of living, and the continuation of the common Czechoslovakia.

He was an excellent representant of mental features like sensitivity, empathy, and solidarity.

JOSEF VAVROUŠEK (1944-1995), system analyst, social scientist, environmentalist, politician, pedagogist, NGO leader, alpinist. Prof. Vavroušek was the first and last minister of the Environment in the Czechoslovak Republic (1990-1992), one of the leaders of the Czechoslovak *Velvet Revolution* in 1989, the founder and President of the Society for Sustainable Living (1992-1995), a member of the Czech and Slovak Associations of the Club of Rome, as well as the youngest member of the student expedition *Lambarene* which brought medication to Albert Schweizer's hospital in Africa. He was the head of the Czechoslovak delegation to the Summit in Rio de Janeiro (1992).

Josef Vavroušek started to be internationally recognized mainly as an organizer of the first European environmental ministers conference at Dobříš Castle near Prague (1991). Due to this fact, Josef Vavroušek used to be called the *father of the "Environment for Europe" process*. Human values and environmental ethics were of particular importance to him. The Dobříš Conference underlined the importance of these ideals in the search for ways of sustainable living.