



ARTIKEL



EVOLUTIE

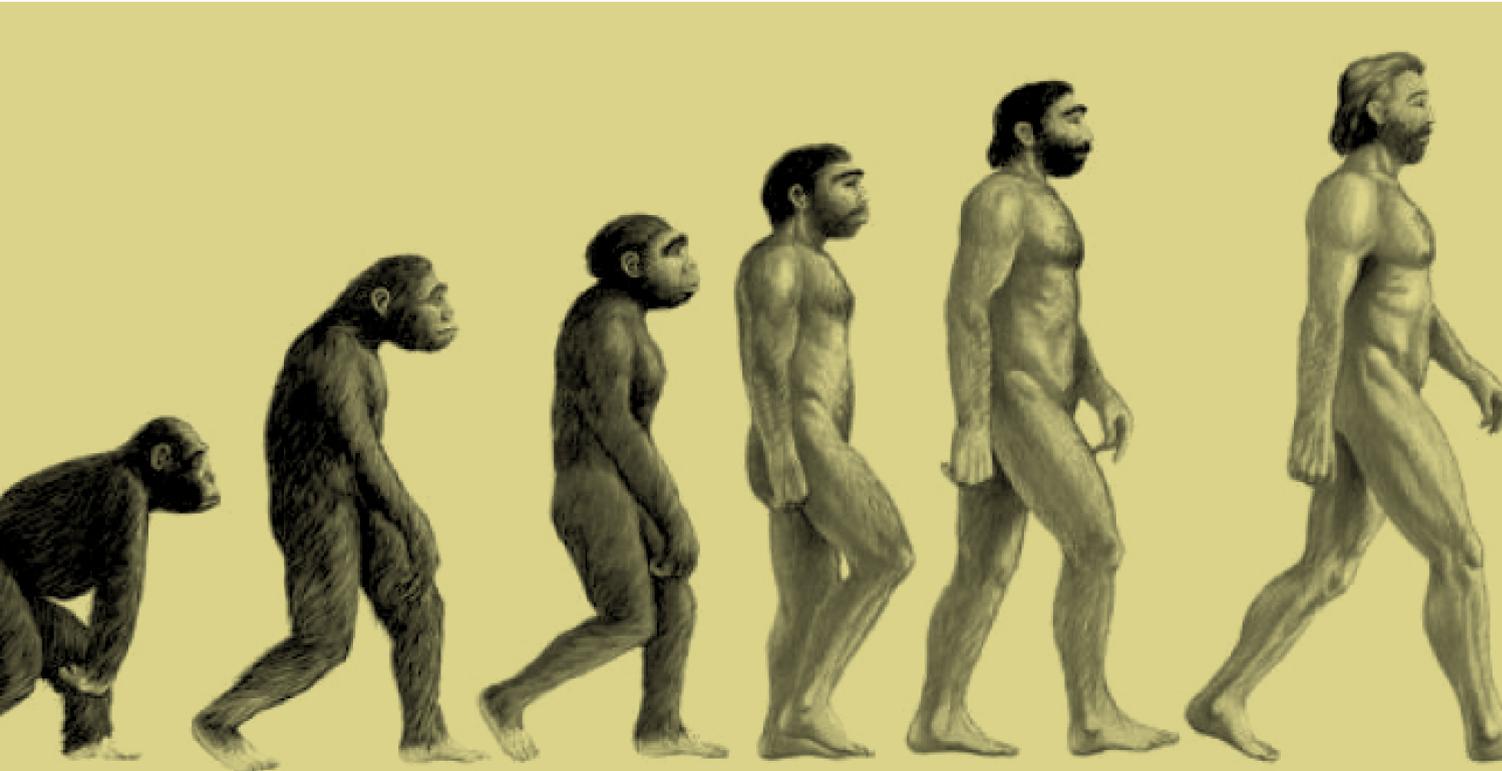


ECOLOGIE

Evolution and ecology

Maart 1990, in 'Futures'

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In recent years there has been growing awareness, among the general public, government and business, of the environmental problems threatening the Earth. This new consciousness challenges outmoded Newtonian models, reintroducing the interrelatedness of living beings, and posing the existential question of survival. The birth of this consciousness can be seen as the start of an important evolutionary step for humankind. This article examines the nature of evolution up to the present phase. It postulates that ecological consciousness may contribute to the development of an expanded worldview and the reintroduction of spiritual and philosophical factors into political and entrepreneurial decision making, thus offering new potential for human growth and enrichment.

It is clear that people everywhere are becoming aware of the environmental issue. In the last year particularly we have seen manifestations of this awareness indicating that world leaders too are beginning to address the issue in a way quite different from before.

When Mrs Thatcher addressed the British Royal Society in September 1988, over 40% of her speech dealt with the ecological imbalances and the need to accept the concept of sustainable economic development in order to leave stable the fundamental equilibrium of the world's systems and atmosphere. Mr Gorbachev, in his speech to the UN General Assembly in December 1988, stated that the world is becoming a single organism and that the growth of the world economy reveals the contradictions and limits inherent in traditional models of industrialization, as further extension and intensification spell environmental catastrophe. Mr Bush, in his new government, has appointed a professional environmentalist, William Reilly, formerly President of the World Wildlife Fund (WWF)/Conservation Foundation, to the post of Administrator of the Environmental Protection Agency. Queen Beatrix of the Netherlands devoted her entire 1988 traditional Christmas speech to the nation to the subject of environmental threats to the very existence of life on Earth. In June 1989 the Paris Summit meeting of the seven leading nations devoted a long paragraph to the major environmental threats.¹ In early 1989 two multicountry conferences were organized, by the UK and Dutch governments respectively, in London and The Hague on the ozone and greenhouse issues, with considerable international publicity, and subsequent meetings in Toronto and Helsinki, where global agreements were prepared. Thus, the existential question is entering palaces, cabinet rooms, boardrooms and last but not least the ordinary living room.

Rise of ecological awareness

It seems that a process that started somewhere in 1972 is accelerating and gaining momentum. In 1972 the Club of Rome published the report *The Limits to Growth*;² that same year, the United Nations Environment Programme (UNEP) was created. Also in 1972 the Stockholm Conference on the Environment added weight to the call for urgent action. A long break followed, partly as the result of the energy crises in 1973 and 1978. Then in 1980 four important reports were published: *World Conservation Strategy* by The International Union for Conservation of Nature and Natural Resources, WWF International and UNEP;³ *Global 2000*, commissioned by President Carter;⁴ *Interfutures* by the OECD;⁵ and *North-South* by the Brandt Commission.⁶

In October 1982 the UN General Assembly adopted a resolution, with only the USA dissenting, on a *World Charter for Nature*, a powerful and important policy document for national and international action on the principles of conservation by which all human conduct affecting nature is to be guided and judged.⁷ In 1983 the UN set up the World Commission on Environment

and Development (WCED) as an independent body. In 1984 these so far predominantly institutional and governmental programmes were for the first time joined by the business community. In November of that year, a conference was organized by the International Chamber of Commerce and UNEP in Versailles. Called the 'World International Conference on Environmental Management' (WICEM), it was attended by business executives and cabinet ministers from over 50 nations, both industrialized and developing. In April 1987 the WCED published its report, *Our Common Future*, filling in an agenda for global change with an emphasis on achieving sustainable growth through a balance between ecology and economy.⁸ Many countries are now working on national policies and procedures following the recommendations of this Brundtland report, so called after the name of its chairman, the former prime minister of Norway. In the Netherlands, for instance, in June 1989 a National Environmental Policy Plan was published, produced by the integrated effort of four different government departments: economy, agriculture, traffic and environment.⁹ Norway published a white paper in May as its own response to the Brundtland report, resulting also from a multidepartmental approach to the ecological challenge. Meanwhile, a network of international and global ecological exchanges has been expanding rapidly, accelerated by advanced technologies in communication and scenario techniques. Throughout 1988 the media became increasingly active on environmental issues to the extent that nearly every citizen in Western society at least became aware of problems such as acid rain, the hole in the ozone layer, the greenhouse effect, toxic waste and its effect on the quality of the soil, water and air. Consciousness extended into geographical space and into time dimensions, going beyond the traditional boundaries of the household, the province, the nation or the region. A remarkable culmination took place when *Time magazine* published its 1989 New Year's edition, which was almost totally devoted to the deplorable state of the Earth systems and the threat to their survival, displaying on the front cover a sorry picture of 'Endangered Earth' as 'The planet of the year'. Around the same time the National Geographic Society published 'Earth '88', a high-quality document with professional illustrations of the ecological challenge.¹⁰ In September 1989 *The Economist* had a special survey on 'Costing the Earth',¹¹ *Scientific American's* September 1989 issue was exclusively devoted to 'Managing planet Earth' and the *New Yorker* in that same month published a 45-page article called 'The end of nature'.¹² It appears that increasingly the ecological crisis is having a distinct influence on human consciousness, both individual and collective. There is also an existential element present: the question of survival of the natural world, including the human species. In this way spiritual and philosophical considerations are entering the minds of citizens of this planet and these considerations are connected to their daily actions and decisions.

Understanding cosmic evolution

This trend can be related to the evolutionary vision of Teilhard de Chardin concerning the process in which this planet and the whole cosmos is involved. According to Teilhard, the increases in the level of consciousness is a typical feature of cosmic evolution.¹³ A better understanding of this process and the role human beings and humanity play in the present phase will contribute to the development of an appropriately expanded worldview. This seems an urgent task given the global dimension of the ecological crisis we are beginning to discover. Our perception of reality has to adapt itself to the new situation in order to match the challenge that clearly confronts humanity today if we do not want to run headlong into disastrous suffering within the next decades.

Integrated Earth

If we consider some of the main elements and phenomena of the evolutionary process as we now start to understand it better, we can first look, in Figure 1 (further on in this article), at a general picture of the Earth, built up of the geosphere, the biosphere and what Teilhard called the 'noosphere'. The first consists of mineral, inorganic material; the second of living, organic material; the third of spiritual nature. All three are, however, totally integrated in one organism, sometimes called Gaia, the Greek word for mother Earth. It is important to remember this triple integrated nature because the denial of the interconnectedness of everything in the cosmos, including the ecosystem of the Earth, lies at the root of our present ecological crisis. It is therefore useful to analyse in more depth what happened in the evolutionary process. Figure 1 may seem a static picture but in reality the Earth is involved in an ever expanding, evolving and dynamic process that started about 4.5 billion years ago within the context of an expanding universe that probably originated some 15 billion years ago. We do not and will probably never know what exactly happened in the course of time but we can describe trends, systems and models and we can try to interpolate and extrapolate these in order to project, not to predict, alternative scenarios for the future that could influence our behaviour and actions. These actions could, as it seems today, eventually lead to extinction or to survival. At the same time we must remain constantly aware that the systems and models we design to describe the phenomena we see or the concepts we develop are not in fact the reality; they try to describe reality or at best to approach it. This is important because the tragic misunderstanding that our models are reality has contributed in the past and unfortunately still contributes to our mismanagement of the planet, as will be discussed further. When we study the details of the evolutionary process, as schematically presented in Figure 2, some patterns can be detected that can be useful for understanding our present situation and its perspectives.

Limits of complexity

The first pattern we see is that each system reaches a limit of complexity after which a new system emerges. The new system is completely different, but contains the elements of the previous system(s). In other words there is a radical change or transformation, but no destruction of the previous system. On the contrary, the previous systems play a vital role in the constitution of the new system – they and their forms remain part of the creation in their own right. What takes place is not revolution but evolution – evolution with discontinuities, leaps, creativity and irreversibility, but which at the same time maintains coherence and interrelatedness, the essence of the ecological principle. This ecological principle is inherent to all systems on Earth, being part of the ecosystem of the planet as a whole. Two examples of the limits of complexity, each at the extreme of the spectrum, are the atomic system and the human society. The atomic system reached its most complex and largest form in nature in the element Uranium with atom number 92. Further evolutionary growth proceeded through the emergence of a totally new system, the molecule. In this new system the binding forces and the organizational constitution are radically different from the atomic system. A leap has occurred.¹⁴ At the other end of the spectrum, human society today, consisting of individual human beings (themselves the most complex manifestation of the organismic system and therefore its endpoint), has reached a level of complexity and size where it seems evident that we are once again approaching a threshold where a new leap could occur. Ecologically speaking it is useful to recall once more that all the systems that evolved in the course of time, going back to the very origin of the universe, are present today. Everything in the living world is interdependent in a global symbiosis and consists of the same atoms over and over again. **Chance and choice** The second noticeable pattern appears to be that the evolutionary process proceeds through a mixture of chance and choice. It seems neither totally predetermined nor totally random, but pre-patterned. Its course cannot be predicted, but the participants can influence it. Statistical probabilities can be detected, but improbabilities also have a function: in fact the most creative transformations often stem from this source. Examples are the emergence of 20 specific amino acids as building blocks for living organisms, the DNA molecule for genetic transmissions and the phenomena of the eye and the human brain. **Divergence and convergence** The third lesson of evolutionary history is that in periods of expansion of existing systems we see differentiation, divergence and diversification, whilst at the time of transformation into new systems we see integration, convergence and consolidation.

Spiritual transformations

Fourth, Figure 2 shows that parallel to the more or less chemical and physical process described so far, spiritual transformations manifested themselves in the course of time, such as the emergence of life, of consciousness and of self-reflective consciousness. These manifestations seem to correspond with increasing levels of complexity. Teilhard called this the 'law of complexity/consciousness'. These manifestations are closely related to specific energies that also play a major role in the noosphere, the new dimension added to the geosphere and the biosphere. This noosphere is expanding rapidly in our present age. The unpredictable courses in evolution that lead the process forward and upward (as Teilhard characterized it) seem to be driven by a specific type of energy, which differs from our normal perception of energy in the form of heat or power. This different type of energy, which has no place in traditional science and does not form part of the entropy equation, could be identified with Bergson's *élan vital*,¹⁵ Teilhard's psychic or radial energy and Prigogine's self-organizing forces.¹⁶ These energies are also manifest in the creative mind and spirit of the human being. It is not unlikely that through this force within the human being or within human organizations like the business enterprise, a person and groupings of persons are capable of becoming co-creative in evolution and able to influence its course, in however minor a way. In this respect the human being, conscious of the self and of life and death, is distinctly different from all previous creations. In religious terms, one could characterize this ability as the divine connection.

Planetary consciousness

At this point we can revert back to the human consciousness of the environment described earlier in this article. With the increasing complexity of human society on Earth, the increased awareness of the need to maintain ecological balance reaches a global level. One could call it a kind of planetary consciousness, of a higher order than the human being's self-reflective consciousness, not superseding but including and fortifying the human individual consciousness. This last aspect is essential for our understanding of the need for a balance between individual behaviour and action on the one hand, and collective rules and regulations, on the other. Today we see a rapid, in fact exponential, increase of the density in the noosphere in the form of more and more information being generated and stored. This information is accessible at any time anywhere on the planet through satellites, telephones, faxes and networks of scientific, economic, technological, political and social institutes and businesses. This increasing density in the noosphere, parallel to the growth in population from 1.6 billion people to 6 billion during this century and the growing complexity of human society, points towards the approach of a new threshold. It is interesting to look at the history of the development of the noosphere, which is mainly the result of human spiritual, intellectual and creative effort over

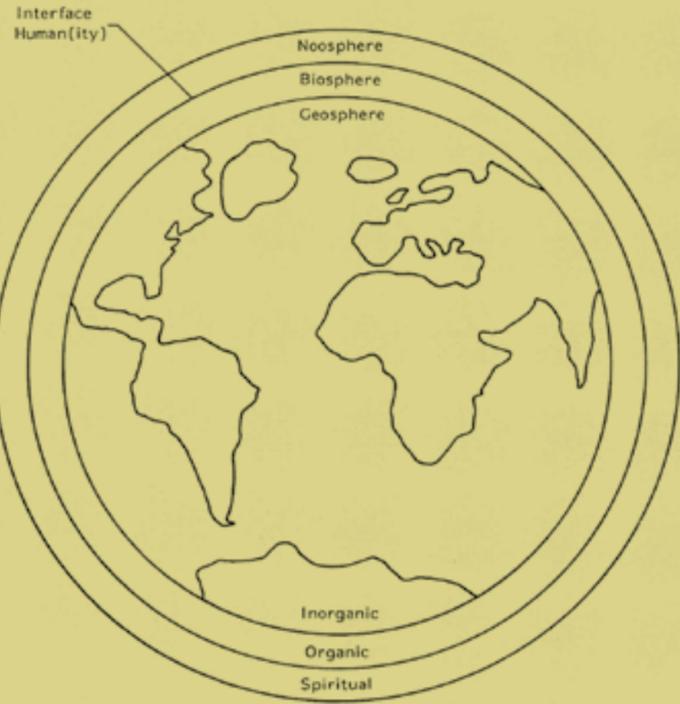


Figure 1. Three spheres of the globe

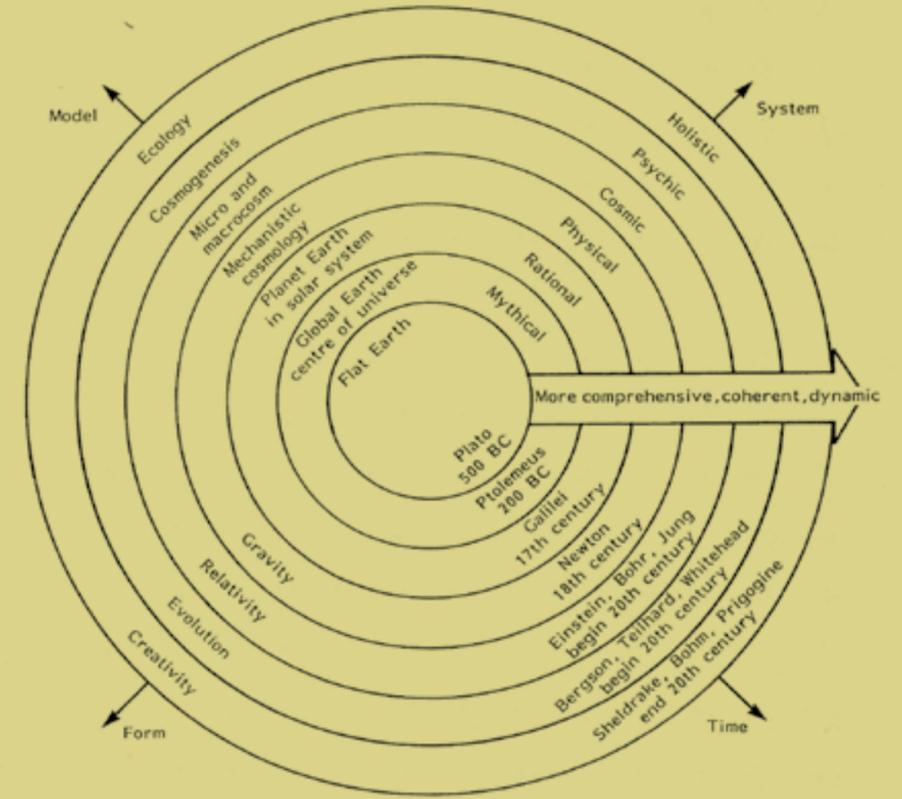


Figure 3. Expanding horizons in worldview.



Figure 2. Expanding horizons in evolution

the course of a relatively short time. Figure 3 (see previous page) illustrates, again in an artificial model, how one could present in the course of time the mainstream of human thought and conceptions about the relationship between humans, Earth and the cosmos, resulting in different dominant worldviews in different stages of perception of reality. The timespan here is not 15 or 4.5 billion years, as in the previous figures, but this time about 3000 years. Interestingly, we see the same phenomenon of expanding concentric circles reflecting the ever evolving, dynamic nature of the noospheric dimension with discontinuities, transformations and new systems and models as time progresses.

The reason for such a drastically shorter timespan is related to the enormous growth of the world population and its creative and productive potential, which no longer depends on the extremely slow mechanism of genetic procreation but on immediate transfer and exchange of experience, knowledge and knowhow within a generation and without physical limits. To illustrate this point we need only think of the billions of years it took to develop the eye and that within a century the human brain has extended the eyesight to reach sub-atomic as well as cosmic dimensions through microscopic and macroscopic technologies. World population growth indicates that within the next 50 years the world could count on about 10 billion inhabitants, a figure that the US National Academy of Sciences considers to be above the carrying capacity of our planet. Our Common Future mentions 11 billion as the limit and in 1989 the World Resources Institute spoke of 9 billion. These approximations take into account not only the population growth as such but also the exponential rate in material productivity. These figures urge us to investigate and understand more clearly the nature of the process in which we are involved, as the exponential rate of growth in our present world requires anticipatory rather than reactive policies and actions. If we are faced with discontinuity in quantitative growth in 50 years' time, we had better start to prepare ourselves today. This significantly affects the long-term strategy of the business community and vice versa. The entrepreneur has a distinctive role to initiate and implement a transformation to a new, broader world- and business view, which includes the ecological dimension and qualitative growth.

Evolution of worldviews

Returning to the question of how humanity has perceived the world through the ages and how we have arrived at the critical crossroad of ecology and economy today, let us examine Figure 3 further. Carl Jaspers, in *The Origin and Goal of History*,¹⁷ described the period around 500 BC as the Axial Period. With this he meant that from Greece to Palestine, Persia, India and China, a new view emerged of the place of humans in the space and time of the universe and their individual relation to nature, to a higher authority and to their role on Earth. Originating from revelations and philosophies of previous centuries, these views

culminated in the teachings of historical figures such as Plato, the Prophets, Zarathustra, Buddha and Lao Tzu, all living in that same period.

One may consider this to be the period when the basis was laid for all the great philosophies and religions that are with us today. This period was therefore chosen in Figure 3 as the centre of the ever-expanding series of concentric circles representing the evolution of thought and worldviews in time. During this evolution humans discovered laws and ratios. In the early days they found, for instance, the fixed ratio between the radius and the circumference of a circle (ρ), the abundantly recurring ratio of the divine or golden section (1.618) and the mathematical relationships between musical tones and the division on a string, detected by Pythagoras. Later many more ratios and natural constants were discovered and today we know hundreds of them. Interestingly, in the early days these ratios (the source of the word 'rational') and natural constants were considered of divine origin, proofs of the hand of God, mystical in nature.

In the days of 500 BC the worldview was, however, still spatially limited. In both Europe and China the Earth was considered to be flat and surrounded by water; people in both areas considered their land to be the middle of the Earth, hence the idea of the Mediterranean, surrounded by the *oceanus fluvius* (Europe) and of the Middle Country surrounded by the Four Seas (China). The only difference was that the Chinese thought the Earth to be square while the Europeans thought it was circular.

With the widening of the intellectual and physical horizon, however, the worldview expanded in the course of time, albeit sometimes with big upheavals and violent opposition from the vested interests of religion and science. We only have to remember the trial of Galileo Galilei for his view that the Earth was not the centre of the universe, and more recently Rupert Sheldrake's morphogenetic fields theory published in *A New Science of Life*,¹⁸ which the prestigious periodical *Nature* considered a book which deserved to be burnt.¹⁹ Sheldrake published a further strengthening of his case in 1988 with *The Presence of the Past*.²⁰

Figure 3 describes some of the major changes in worldviews, their main advocates and the timespans in which these views developed. In parallel with Figure 2, we see discontinuities and leaps, and we also see that new theories do not necessarily make old theories obsolete, but rather place them in a wider perspective. The new thinking supersedes the old, yet within their more limited scope, the old theories remain valid. If, in our present days, we have not yet found a worldview that links the laws of the sub-atomic world with those of our immediate surroundings and the laws of the macrocosm, it does not mean that these laws are not useful in their own right in their own dimension.

The whole process described in Figure 3 can be characterized by a progressively increasing level of consciousness, reminding us of Teilhard's law of complexity/consciousness. A striking element in this

process is that the worldviews, which at the beginning were predominantly space-oriented, gradually began to integrate the developmental time factor to which in recent years the complexity factor has been added. Teilhard first saw this intuitively and Prigogine gave it scientific weight. But as recently as the 18th century (for instance Linnaeus's *Systema Naturae*, categorizing the plant world in a logical system) and the 19th century (Mendeleev's Periodic System, which logically arranges the elemental atoms) neither the developmental time factor nor the complexity factor played a role in the perception of reality. Very broadly, one could say that it was not until the 20th century that the worldview evolved from static, cyclical, simple equilibrium models and systems to dynamic, evolving, complex and non-equilibrium ones.

One would be inclined to speculate that the highly complex and exponentially growing size of human society in the 20th century, coinciding with the emergence of a new level of consciousness, are symptoms indicating that a new leap in the evolutionary process is forthcoming. Such a leap would be comparable to the types of leap that occurred several times in the history of evolution when limits of complexity and size were reached. This time, however, the leap would not occur through aeons long transformations in psychogenetic chemistry in the geosphere or the biosphere, but through spiritual and intellectual creativity in the noosphere, integrated with and not detached from the other spheres. This last observation is important because the detachment from the other spheres that crept into the human mind through the ages is a major source of the ecological imbalance we are witnessing today and needs to be corrected if the evolutionary process is to continue without disasters and great suffering. As noted earlier, because of the unprecedented speed in quantitative and qualitative evolution in the last 75 years as compared to the billions of years this took in the past, we may not have more than 50 years to restore the balance and prepare for a new age.

What went wrong?

How did the imbalance we experience today come about? What went wrong? It seems that something went wrong in the 16th, 17th and 18th centuries. In the course of the ever expanding models of science, so many laws were detected and invented that increasing numbers of specialists in specific fields emerged, compartmental thinking developed and coherence reached out of sight. Also, science 'liberated' itself from the mystical, the spiritual, the divine element. More and more, the specialists isolated themselves from each other and their models became increasingly mathematical, rational (a semantic paradox) and mechanical. Materialistic reductionism became the basis of all scientific method, be it in chemistry, physics, cosmology, astronomy, technology, medicine or economics – both macroeconomics in national accounting and microeconomics in business enterprises. Ever more knowledge was obtained about the microcosm and the macrocosm, about chemical reactions

and the functions of organs, about statistics and econometry, about machines and the transformation of natural resources. But the ecological dimension was lost. In modern terms, one could say that the left part of the noosphere became predominant, like the left part of the human brain. The human species thought it was in control; it became arrogant and its perception of reality became purely anthropocentric. Radical dualisms were introduced by philosophers like Descartes, Laplace and Bacon. Even the unity between body and soul was broken in the intellectual dreamworld of the (neo-)rationalists.

Here we find the roots of the deviation in the evolution of human thinking that led to interference with the planetary ecosystem. Today this imbalance is manifesting itself so strongly and alarmingly because the size of the human population and its productivity have soared in the 20th century, gaining more momentum every decade. The relative proportion of the human factor in the Earth process is becoming so great that we can no longer refer back to former times, when the Earth system was able to absorb and compensate for great changes.

In the 700 million years history of plant and animal life on Earth we have been able to identify five extinction periods where a substantial part of the existing species disappeared, but each time there has been a recovery to a higher level and number of species. The human being entered the biosphere a few million years ago at a point where the number of species was higher than ever before. The rapidly increasing extinction of species we witness today is caused mainly by the presence and growth of human plundering and takes place on an unprecedented scale and time frame. If we become aware of this new fact and start to act accordingly, we can still influence the course of events for the better. Our influence will very much depend on whether the individual, the business community and the political institutions are willing and able to adapt their worldviews, their models, to the broader context of the evolutionary process to include the existential issue of life on Earth.

Correction of our course

What is needed is a correction of our course, however brilliant and useful the specialists may have been for the benefit of the standard of living and comfort of many people, though regretfully not for the majority on this planet. The necessary correction is to reintroduce interdisciplinary methods and integrate spiritual energies in the concepts that lead to individual and collective perceptions of reality as well as actions. This is exactly what has emerged in the scientific community in the course of the 20th century, but in most cases only through particular individuals of genius, such as Einstein, Jung, Teilhard and Prigogine. Yet politicians, industrialists, the medical profession and the public at large have until recently and for the most part translated the new concepts into their materialistic, mechanical and rational models.

Resistance

We see today that through growing environmental awareness the ecological factor is invading these outmoded models in which technology and economy constitute the major parameters for decision making. It is not surprising that this creates great confusion and that there is still much resistance to implementing ecological awareness through concrete action. The resistance stems, first, from the common human tendency to resist change. Introducing new dimensions to existing and seemingly successful models is to most people, independent of social level, a nuisance, and can be disturbing, unwelcome or even threatening. Second, environmental issues were until recently mostly identified with leftist political activism, and were therefore considered a threat to the neo-capitalist system. This was not so, of course, in communist countries, where in fact the environmental conditions are far worse than in the West. Third, and it is certainly not the least important factor, the general opinion is that if we take action for a better environmental performance, costs will rise, thus jeopardizing national economic growth and employment, business competitiveness, and people's purchasing power. Although it is clear that, as the Club of Rome postulated in 1972, unlimited quantitative growth is impossible on a spatially limited planet, and no economic activity can exist without resources, the mental and physical distance between these truths and the daily decisions in the household, boardroom and cabinet room is still apparently too great for the connection to be made. Increasingly, however, there is demonstrable evidence that sound environmental management leads to a better economy for households, business and the nation, and that economic growth and employment will not be negatively affected. One of the important elements in this evidence is that reduction of waste creation by changing habits, techniques and technologies has an economic multiplier effect. A simple illustration of how this can be achieved at the individual level is the separation of household refuse at source into glass, metal, paper, food and hazardous materials. Glass, metal and paper can be recycled, food waste can be turned into compost and hazardous material can be treated separately. Practical applications of this principle in Japan and partly in Europe are resulting in economic benefits. If the separation takes place on a larger industrial scale, a refuse-derived fuel is produced as a side product, which is a cheap fuel for energy generation. In the case of industrial processes the remarkable experience of the last decade has been that when the ecological factor is taken into account by trying to minimize pollution of air, water and soil, new technologies are invented that, to the surprise of management, lead to better economies as well. Application of this principle is increasingly becoming company policy in formerly polluting industries in the developed world. The 3M company (a major multinational US corporation based in Minnesota, whose activities include chemicals, minerals and adhesive tapes) was one of the first

industries to put this principle into practice about 15 years ago under a still successfully operating programme, called 'pollution prevention pays'. The method replaces the traditional practice of disposing of waste once it is being produced, sometimes called 'end-of-pipe solutions'. The economies of the preventive approach are continuously improving due to the fact that distances to transport waste are expanding, penalties for producing waste are growing and dumping sites to dispose of waste are becoming scarcer. As well as the demonstrable microeconomies of such practices at the individual and industrial level, macro-economic analyses at national level show that, when taking into account costs of public health, recreational values, employment levels and real costs of natural resources, ecologically sound management is economically beneficial, if not always in the very short term, then certainly in the longer term – if not for the present generation, then certainly for the next. In other words, we do not inherit our resources from our parents but we borrow them from our children. One of the great challenges for management of the planet today is to expand our decision-making models in such a way that they can include long-term effects in time and long-distance effects in space. I was recently involved in a project for this purpose for the government of Taiwan.²¹ An interesting aspect of introducing the ecological element into decision-making is that it gives rise to new technologies, which have and will continue to have innovative spinoff effects in other disciplines. A cynical parallel is that military defence, necessary to safeguard security and freedom, has been an important factor in the development of new technologies; there is no concern about the return on investment of a new frigate, tank or fighter, and military spending of between 2% and 5% of GNP is common practice in many countries. Also in healthcare, which we need in order to defend ourselves against disease and where between 5% and 10% of GNP is easily spent, the question of the return of investment of a new hospital or new equipment is irrelevant. What would then be wrong with investing in the defence of the ecosystem and quality of life, particularly when such investment has an economic return? The main problem is that the defence of our ecosystem does not fit in with our outdated perception of reality.

Conclusion

It is a matter of mind-set. The dominating Newtonian models of technology and economy in our present military, medical, industrial and political structures have to be enriched and enlarged with the ecological factor. The rediscovery of the ecological factor reintroduces the interrelatedness of living beings and their surroundings; it introduces the dynamics of their interactions, their influence on the health of body, soul and nature and eventually on the ongoing evolutionary process, which in the present phase is so explosive in character. It will probably also open up again psychic energies that are often ignored or eliminated from exposure within the materialistic models that have

become the religions of Western lifestyles.

This is where the spiritual element could (re)enter into the realm of consciousness. The ecological consideration confronts us with the realities of the existential question concerning the survival of the planet, the ecosystem and the human being. The spiritual dimension, as shown in Figures 2 and 3, has been an important factor in the evolutionary process and has a potential for growth and enrichment in the human species, because of the gift of self-reflective consciousness. It does not seem unlikely that this growth and enrichment will be stimulated in the present phase of evolution by the emergence of ecological awareness that we are experiencing today at the individual and global levels. When spiritual and philosophical factors – together with, not in place of, technological and economic factors – start to play a role in political and entrepreneurial decision making, as Plato proposed two-and-a-half thousand years ago, one could speak of a major step towards the crossing of a new threshold. It would mean that the materialistic, rational and mechanistic predominance in human behaviour would recede and the evolutionary process would be on course again. On course to whatever goal, whatever new threshold or whatever radically different world in the 21st century, but definitely, in the words of Teilhard de Chardin, forward and upward.

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