

## CAN THE CRAZY APE HAVE A HOPEFUL FUTURE?

György LICSKÓ

Department of Theory of Science and History of Engineering  
Technical University of Budapest  
H-1521 Budapest, Hungary  
Phone/Fax: + 36 1 463 3473

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### Abstract

In the view of an excellent biologist (Nobel-prized Albert Szent-Györgyi) in our modern age man act like a crazy ape. The base of his opinion is: each living creature has to adapt itself to its natural environment. Men's adaptation is different from that of other living creatures, it is a conscious one. But do we act according to the common sense? No, because natural forces are made part of our activity but they are used in an inappropriate way, so the control over them may be lost. Generally, we are living in a record-oriented way of activity, and not only in the sport. Scientific and technological development can make the problem more serious because with their ever growing efficiency we easily can upset the equilibrium of natural processes necessary for us. Can we follow morally this accelerating pace of effectiveness or we enter and remain in the field of intemperance?

*Keywords:* adaptation to environment, science and technology, equilibrium of nature, accelerated development, intemperance, moderateness.

### 1. Man and His Natural Environment

In a Hungarian comic journal the following joke could be read some years ago: At an imaginary space conference a question was raised: 'How do things stand with the experiment with that self-destructing creature?' And the answer was: 'The experiment is getting along nicely.' Well, the fact that we find this self-ironic humour appropriate justifies the worries found in a study published by Albert Szent-Györgyi some 25 years ago. The excellent scientist expressed his worries from a biologist's point of view. From this point of view man — in the present period of his history — acts like a crazy ape.

Let us examine what is the base of this opinion of the outstanding biologist. He starts from the biological requirement according to which each living creature has to adapt itself to its environment. Naturally, this

requirement concerns human beings as well. True, in this latter case this requirement asserts itself in an indirect and not a direct way. For man as a consciously acting creature differs from other living creatures exactly in the essence of this activity — a conscious environment forming. That is to say, man does not adapt himself biologically to his natural environment but transforms it according to his needs. Of course, later he has to adapt himself to this transformed environment. But that nature of the adaptation to his 'second nature' is not so much biological as increasingly social, i.e. a conscious adaptation. Adaptation is necessary for man as well but it is different from that of other living creatures in its nature and way. Albert Szent-Györgyi states that man living in the second half of the XX. century cannot adapt himself appropriately to the transformed — and transformed exactly by him — environment. In previous periods of his history such problems could not occur as the transformation of human environment was not of a great scale like that. Until the second half of the XIX. century instruments, methods and knowledges available for man were not so effective that irreversible changes could have been caused in the natural environment.

Science and technology increased the efficiency of those human capacities which are manifested in the activity being synchronous with this historical inheritance. This offers a clue to understand the point that historically contemporary cultures with similar means and with a similar degree of social development can reveal substantial differences. Today's European and American man being the child of so-called 'Western Technology' tends to identify the efficiency of technology with the efficiency of tools. This approach cannot understand the culture of the four or five thousand years old megalith buildings and shares the reasoning of Däniken who could only imagine the building of pyramids with the co-operation of an extra-terrestrial civilization.

The efficiency of human activity originates from the structural combination of some important social factors. However, it is undeniable that as from the industrial revolution the ratio of the efficiency of tools has been increasing. This is due to the fact that man can objectivize more and more of his capacities and during objectivization concrete human capacity is usually multiplied. In this connection let us think of the power-machines, machine-tools or computers. Now the question is the following: which is the culture and which is the activity whose efficiency increased by this overgrowing tool-system?

Since the beginning of the 20th century scientific-technical efficiency has not only increased greatly and rapidly but is has changed considering its character as well. Formerly scientific research and its achievements were in general realized in a directly perceptible way. The effects and the application of natural laws were perceivable. This was the case first of all in mechanics, in most fields of physics and in several cases even in chemistry. The human organs of sense developed biologically in such a way that they perceive the so-called macrophysical phenomena but not the microphysical ones. We cannot perceive an atom, an electron, or radioactive radiation. Of course, we can comprehend, understand all these things theoretically, with the help of our mind, our brain. But do we really act according to the often mentioned common sense?

Well, in Szent-Györgyi's view, i.e. in the opinion of an expert biologist, the greatest problem can be deduced exactly from this question. More and more natural forces are made part of our activity, natural forces that are not perceived in their natural existence. But we perceive their destroying or deleterious effects tragically when they are used in an inappropriate way of when our power, control over them is lost. Nowadays it is called a 'boomerang effect' and this boomerang returns to us more and more frequently. These things causing such effects, i.e. things that cannot be perceived directly are usually drawn into the system of our activity in an inadequate way. These are regarded and treated as the old, usual ones with several hundred years of experience. Thermo-nuclear, chemical and biological weapons are massed up exactly as firearms and bombs. Artificial fertilizers are used similarly to nature, synthetic combinations produced in pharmacy are applied in the same way as were medicinal herbs in the past, etc., etc.

But as a matter of fact thermo-nuclear, chemical or biological weapons cannot be used. For their efficiency exceeds the limit within which their use can be advantageous against the enemy. The constant use of chemicals — in view of historical scale — ruins quickly both soil and the natural environment of man and human organism. That is to say we prepare and do everything to destroy the conditions of our existence and ourselves.

## 2. The Growing Efficiency of Our Means

Some decades ago these and similar tendencies and consequences were not recognised clearly. We were made too self-confident by the belief that soon

we would be able to solve everything by developing science and technology. We believed that we have ruled over the Nature. At present we are getting rid of this naive idea. But our problems have become more severe. Now we know what we ought not to do but, nevertheless, in most cases we act as if we would not know it. The common sense has and will have a greater role in the future that it had in an era when things belonging to our activity were perceivable directly. Now we have got so effective instruments, methods, knowledges at our disposal the consequences of whose application cannot be entrusted solely to experience. It may easily happen that as a consequence of experience there will not be another possibility for new experiences because there will be neither subjects nor objects for a new experiment. Therefore, the possible consequences should be considered in advance. That is why the warnings of the most outstanding representatives of science made in due time should be taken seriously, because they recognise earlier than anyone else the danger of the suddenly multiplied efficiency in their special field.

But why are we willing to ignore all this or if we recognise it why do we act if we did not realize it? I think, it is only one of the reasons of this irresponsible behaviour that professor Szent-Györgyi emphasized, i.e. that this danger can be comprehended by our minds only, it cannot be perceived by our senses. I consider another important reason the fact that the accelerated rhythm of our life and all our behaviour is characterized by some kind of *record-oriented hurry*. This behaviour and the appropriate compulsion of action have become so natural for us that they determine the system of our values as well. Having the efficiency gained by applying sciences at our disposal we strive after increasing possibilities that can be expressed quantitatively and successes achieved in this field are considered first-rate values.

Much is said about the quality of life whereas in the meantime we make ourselves get accustomed to short-life, uniformized industrial mass-production. Yields are increased in plant cultivation and animal breeding by chemicals, synthetic nutrients by which the soil is destroyed and the one-time good taste of vegetables, fruits and meat is lost. In the spirit of 'Time is money' we are willing to spend more and more time to earn money as a consequence of which we do not have enough time for spending our money carefully, in a manner worthy of a civilized person. Generally speaking, we want to surpass other people, other organizations, institutions and our former or present selves in all activities that can be expressed quantitatively. Perhaps this 'record-imperative' can be seen in its most direct form

in sports. Young sportsmen overwork themselves in excessive training and take drugs in order to improve their results by some centimetres or by a few splits of seconds, whereby both their own health, nervous system and the real beauty of competitions are destroyed.

The scientific principle and method of getting to know the world (from the time of Galilei and Bacon) gradually strengthened in the European man the pride that eventually he would increasingly dominate nature by means of discovering and applying laws. The principle of dominating nature was first voiced by the representatives and advocates of modern science, however, in the 19th century, it became widespread. Referring to Hegel's well-known phrase we may say: the 'List der Vernunft' became felt over a wide spectrum only when man began to introduce the natural connections and forces discovered in the laws to the production process and the everyday life.

In this respect let us think only the fact that the age of the big machine-industry began only 5 or 6 generations before us, while the age of natural economy in the European Middle Ages covered some 35 or 40 generations, with efficiency increasing at a much slower pace. And in the second half of the 20th century the rate of growth of efficiency has shown a faster tendency than ever before. It is quite obvious that man became inclined to see some sort of 'terrestrial omnipotence' in scientific work and the machine-systems representing the power of science.

### 3. The Problem of Intemperance

The negative effects of Western Technology (pollution, problems with raw materials and energy, etc.) having appeared recently can only be understood if we associate the rapidly growing efficiency of technical means and methods not only with the development of sciences but also with the whole human activity based on trying to surpass every result — first of all: quantitatively. In our age one of the greatest problems is that this unlimited nature of human activity is related structurally to the rapidly growing efficiency of means and methods. Human activity containing the mentioned tendency of intemperance assumes a general need to create and apply means and methods by which it can steadily increase its own efficiency. Man oriented to such activity identifies the meaning and justification of his existence with the ownership and application of the increasingly effective means and methods. Through them he will experience the power of

his capacities and their development. It is true, these capacities forced out of people constitute the solid basis of human richness. The problem lies in whether or not this basis can be freed from the constraint of the intemperance of the activity built on it.

The more effective the means and methods that mankind acquires, the greater is the danger of intemperance. The so-called 'Technical Imperative' posing the question whether man is always obliged to realize in practice all that can be realized on the basis of the latest results of science and technology itself refers: in actual fact to the dilemma of keeping the limits or becoming intemperance. Since it is practically impossible to ban or conceal the establishment of new and increasingly effective means and methods, let us have a look at the epistemological and ethical implications of this technical imperative.

Epistemologically speaking, are faced to with the problem of knowledge in retrospect, that is, with the so-called 'post festam' problem. When we apply new means and methods that are more effective than the existing ones, then we can understand the consequences of their effects only through subsequent experiences. A good example to this effect can be found in pharmaceutical chemistry. The greatest problem of pharmaceutical researchers that have been facing in the past decades is to find and produce the compounds that can be applied as medicines against the detrimental effects of medicines discovered and produced some 10 or 20 years ago.

#### 4. We Need the Equilibrium of Nature

The artificial intervention in natural processes often coincides with similar effects in quite different fields. And the more powerful, the more operative the intervention, the more forceful is the reaction, the mentioned boomerang effect. In the case of human intervention in natural processes, the retrospect characteristic of knowledge is a phenomenon that calls for a cautious approach to be made. The point is that the time applied to nature and to society involves two fundamentally different things. If we upset the equilibrium of natural processes, then, after some imbalance of a decreasing extent, the equilibrium will be restored either in the old or in a new form. But the period that elapsed is defined by nature, that is, it can be many times more than what can be encountered in teleological human activity. Today man can easily upset an equilibrium in nature without

having time 'to wait' for the restoration of balance; and the new intervention made for the sake of more rapid restoration of equilibrium can cause further surprises of a retrospect (post festum) nature.

All the serious problems outlined here direct attention to the fact that the rapidly growing efficiency of the means and methods, that is, the technique of human activity requires moderation in all fields. The new scientific and philosophical thinking that took shape some 3 or 4 centuries ago started with voicing strong criticism of the Aristotelian theses. It had to do so because all the Aristotelian traditions permitted man to help nature to accomplish what was left unaccomplished, that is, the imperfect things. But in the possession of new scientific knowledge man set the goal of bringing the natural forces under control and used them for his own interests to satisfy his needs. Therefore, the concept setting too narrow limits to man's possibilities had to be discarded.

This change in the interpretation of human possibilities was justified in many respects. But something from among Aristotle's teachings ought to have been given more respect. In the system of the great Greek thinker the category of measure played a central role. In this philosophy the most important point of passing a judgement on individual or collective activity was: what is the extent to which man could acquire the sense that can save him from the extremes, intemperance, and gives him security in setting and achieving his goals and performing his activities. Regrettably, however, man who has developed new science, modern technology has already lost, more or less, his sense enabling him to be moderate and avoid extremes.

The special danger of the present technological development is that our producing culture oriented to intemperance and records and the method and system of means utilising the scientific results with rapidly increasing efficiency exist simultaneously, alongside one another and in a well developed form. When being viewed on the plane of phenomena, in the structure the means seem to be the primary causes of danger because we have immediate experiences about their effects. Not doubt, that scientific power objectivized in means also comprises, the possibility of effects that are harmful or dangerous to man. It is quite obvious for everybody that if production and financial interests are stronger than the control of the consequences of the applied science and technology, then the harmful effects can go as far as becoming irreversible. However, as I tried to point it out, the problem is much more general because it stems, beyond our production and financial interests, from the way of life of the man — at least in Europe (and of course in the USA) oriented to records and intem-

perance. We may say that beside the technological imperative mentioned earlier there is also the imperative of record and intemperance, and this imperative inspires the growth of efficiency having its goal in itself. All these efforts are manifested as a phenomenon in the creation of ever newer and increasingly effective means and methods, but behind them there lies the social life-activity oriented to intemperance.

Technology is applied and developed by man, first of all, for forming the world around him consciously. The extent to which man is able to modify or change a given natural process or condition depends on the level of development of the technological means, methods and capacities. For this reason technology as the totality of objective and subjective factors increasing the efficiency of human activity contains, already on an elementary level, the abstract possibility that its application will bring about unwanted reaction on the part of nature.

The present and future efficiency of our technology makes it ever more probable that the harmonious conditions of nature will be disturbed which will have incalculable consequences theoretically. So the present and future efficiency of technology poses the demand that the co-existence of nature and society free from artificially created disturbance must be ensured. This is necessary at least on the part of the society, because we are virtually unable to cope with natural disasters such as earthquakes, floods and the like.

The demand for co-existence free from artificially created disturbances calls for controlling human activity conforming, on the social scale, to the equilibrium of nature, that is, it is acknowledged that certain limits must not be exceeded even if it could be done easily by relying on its effective means and methods. However, this pressing demand can only be fulfilled if man changes his life-activity oriented to intemperance, that is, if he develops his capacity of being moderate and makes it generally valid. The greater the powers that man can draw into the range of his activity, the more moderate he must be in selecting the possibilities for the realization of which he applies the technology that can concentrate these powers.

The greatest obstacle to carrying out the necessary change is that the factors acting in the direction of intemperance have a determining force which is respect of human life. Being moderate were to be contrasted with this determining force as a sheer intention, obviously this intention would be of no avail. Results can only be achieved if the factors determining the approach of being moderate are found and developed in the whole life-activity of the man. While refraining from voicing any sort of utopia, for

the time being all we can say is that a moderate approach must be founded upon such an objective richness which, instead of hampering, makes it possible for developing further human capabilities.

### 5. Against Extremities: Moderateness

How can we get out of this intemperately record-oriented life-style? The answer to this question is not easy. We cannot declare unanimously the record-oriented behaviour negative and bad because if we did so we should be against development and progress. That is, the path leading to a solution should not be sought in the opposite direction. The anti-scientific and anti-technological attitude recalling Rousseau is, on the one hand, only another expression of extremity and, on the other hand, it is practically unrealistic because man does not give up his demands reached and developed historically. Likewise, he does not abandon the further development of technology, further increase of its efficiency. A settlement of this problem can be moderateness being against both extremes elevated to the level of a first order value applied to present relationships. This value must be validated not against our productive culture but within it, in the activity of the people of this culture. In other words: what we have to aim at is not decreasing efficiency but restraining those socio-economic factors that contain the force of human activity becoming intemperance.

In my opinion the notion of record should be given a new and different meaning. This notion should be extended. It should be humanized, made worthy of man in a way so that it contained the requirements of quality of life as well. And if we act accordingly, we can change our system of value which is now deformed in a merely quantitative direction.

Quoting some examples: We have to strive for evaluating lasting and reliable products which take individual needs into consideration as well as opposed to uniform, quickly outdated mass products. E.g. the durability, reliability of a car should be appreciated more than its speed. We should give preference to tasty vegetables and fruits even if a less tasty variety brings more profit. In sports, the sight of harmonious beauty and fight of strength and skills developed without drugs, by healthy training should be more important than new records, etc. Several other similar examples could be cited from all fields of our life.

In place of the deformed, one-sided quantitative record-oriented attitude and behaviour we have to develop the culture of temperance. We

have to learn how to size up the possible consequences of our activity. The more we are able to increase the efficiency of our activity by applying the results of sciences and technology the more we need to size up the possible consequences. So this efficiency can be increased more quickly than the acquirement in everyday life of moral requirements and responsibility necessary for safe application. Acting while possessing techniques and scientific achievements of great efficiency should be allowed only if the consequences of such an action are known and taken. The greatest danger man faces nowadays is the discrepancy between the quick spread of effective instruments and methods on the one hand and the lack of political-moral responsibility necessary for their use on the other.

Man can hardly resist — if at all — the temptation to besiege with ever increasing efficiency and rapidity the boundaries of his own possibilities. How should this special human striving be evaluated? It can be considered courage if it is done carefully, taking consequences into account as well. But it is recklessness if we do something simply because we have the possibility to do so, without being concerned about the consequences. Courage is a virtue worthy of man, recklessness is rather a sin at the present level of efficiency. The man who commits this sin is and will be punished by Nature with a punishment due to a wild child, to the 'crazy ape' ... Maybe we still have the possibility to think over which road to choose — but we haven't too long time for it!