(1995) Proc. Int. Symp. on Biotechnology. Manila, Philippines

Science and technology, central planning and the market: a lesson from the communist failure

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Abstract. The failure of centrally planned economy and of ideological indoctrination in Central European countries, as well as their postcommunist transition provide a valuable lesson to the developing Third World countries. The failure indicates that, instead of constructing pseudorational utopia, humanity has to rely upon superior rationality of dynamic systems, such as market, democracy and spiritual pluralism. It appears appropriate to make a distinction between evolution and development, both generally and in the restricted case of biotechnology. Evolution is a process of spontaneous generation of variants and of selection, it consists in trials and errors and its path is unforeseeable. Development means unfolding of potentialities specific to a country, rooted deeply in the culture of the nation.The distinction applies to the majority of the Third World countries; they are both evolving and developing. Roles of central authorities are different in the two processes: creation of a largest space for most versatile activities in the former and setting up well-founded science policies in the latter. The communist experience as well as the failed attempts of the U. N. to foster development of the Third World in the 1980s have falsified some basic tenets of the development theory, in particular the reliance upon science and technology as a dominant force. The prime attention should be given to the interplay of technology, economy and culture, implying the necessity to promote advancement of biosocial sciences.

1. Introduction

„A specter is haunting Europe – a specter of communism“, proclaimed K.Marx and F. Engels in their Communist Manifesto in 1848. One and a half century later the specter is being exorcized from the European stage. It has left behind, in countries in which it managed to settle down, disintegrated economy, devastated landscape, demoralized population.

The postcommunist countries of Central Europe are trying to re-establish the economic and social organization that has proven its viability and success in the other European countries. Yet, the postcommunist transition is not a simple reconstruction, a copying: the starting positions are different from those that gave rise to capitalism in Europe centuries ago. This is a reason why the postcommunist transition deserves attention of the developing Third World countries. For the same reason, they also need not, or rather must not, recapitulate the evolution pathways of the industrialized countries – the searching zig-zag trajectory should be shortcut exploiting the accumulated knowledge.

The case of the communist countries may be conceived of as a large-scale experiment that failed. As experimentalists we know it: Progress of knowledge is slow, tens of experiments should be done until one of them succeeeds. None of the failed experiments was useless, however, provided that we evaluate it properly and draw conclusions that would exclude the repetition of errors. The communist disaster is a lesson to humanity as a whole.

2. The nature of the Marxist fallacy

The disaster was preprogrammed in the very basis of the system, in the Marxist conception of the world, humans and society.

(a) Marx's philosophy was a belated nineteenth century's product of mechanicism that had dominated the Western thought in the eighteenth century. Being able to describe and foresee the movement of planets and stars, why not be able to describe and master social events? Like the gravitational force in physics, economy was put forward as the single determining force of social dynamics. The discovery of the laws of mechanics was a triumph of individual human Reason – so why should not the individual Reason be able to rule economic and social processes? Why not to replace unconscious, chaotic and wasteful interplays of goods on the market, of ideas in the spiritual life, by a rational intervention?

Science itself has demolished this arrogance of individual rationality. Highly complex systems are not irrational (PRIGOGINE and STENGERS 1981). They are self-organizing, self-evolving, self-perfectionning, their inherent rationality immensely exceeds and transcends the restricted capacity of the individual Reason.The functionning market, political democracy, spiritual pluralism are most powerful computers. How ridiculous, but also tragic, was it to oppose to this superior rationality decisions of the communist party's politburos!

(b) Another flaw of Marxism has been its denial of human nature. Humans were supposed to be unrestrictedly malleable. It would suffice to nationalize capital and the means of production and, assisted by ideological indoctrination, a „new man“ should appear. Contrary to this naive assumption, the practice of communism has corroborated biology: there is human nature, with constants set in by natural selection and it determines and substantially restricts human behaviour.

(c) Culture has been considered by Marxism as a „superstructure“, a sort of epiphenomenon derived from, and conditionned by, economy. Again, this has been falsified and autonomy and strength of specific cultures as a prominent determinant of the societal life has been clearly proven: Marxism, a product of the Western thought, has entirely failed on its own ground, in the countries of Central Europe belonging to the Western culture, has been monstrously disfigured when implanted on the Slavic-ortodox culture of Russia and continues to serve as a guise of pragmatism in the environment of the Chinese culture.

3. Cautions with respect to other doctrines: a backlash

(a) A total negation of Marxist theory and practice is an understandable reaction in the postcommunist countries. In the most consequent of them, economy is being entirely privatized, any intervention of the state into economy and long-term planning of its development are being abolished and the education system is being decentralized and diversified. A conviction is being preached that an individual does the best service to society by pursuing exclusively his/her personal interests. It is a return to ideas of classical European individualism.

From the standpoint of biology, individualism is, however, a onesided concept: it disregards the fact that human has been selected by evolution to become a social animal; indeed, a hypersocial animal. Individual life proceeds in social groups. Neglecting this fact has facilitated the explosion of nationalism in postcommunist countries. The group nature of human does not have only this negative side. It makes human collective endeavours natural, efficient and pleasurable. It may make non-European cultures, founded on collectivism, more efficient and more successful both in exploitation of technological progress and in the mastery of its negative consequences: of environmental pollution and a pathologization of

pleasure. Collectivist cultures may have not been capable to invent science and capitalism, but they may well be able to use their assets more effectively.

(b) Postcommunist transition is sometimes conceived as a purely technical problem. The solution would consist in privatization, massive capital investment, application of modern technologies. Such a concept overlooks the fact that economic and social processes do take place in a multiparameter space.

More even than the postcommunist countries, the countries of the Third World should dismiss such a simplified view. In 1980, the U. N. General Assembly adopted the Vienna Programme of Actionon Science and Technology for Development, aiming at speeding up the development of the Third World. This did not happen and the 1980s have been called „a lost decade for development". The Programme failed; hence, the hypotheses on which it had been based, were falsified (KOVÁČ 1992). The very basis of the Programme was just this: seeing a panacea in science and technology, conceiving „modernization" as a transfer of the Western experience and proclaiming, as the main remedy, an illusory „endogenous capacity building", framed according to the Western model.

It may be argued that the success of Japan, South Korea and some other Asian countries has nonetheless proven the dominant role of science and technology. In fact, one of the architects of the South Korean rise, H. S. Choi, has presented an imposing account of how technology has been a most important springboard of the amazingly fast progress of this country toward a status of a higly industrialized society (CHOI 1988, 1989). It still may be recommended that Choi´s writings should become a basic reading of those who design development paths of their own countries. It should be, however, put to the fore the essential fact, which is only implicit in these writings: science and technology would have been of no avail if not planted on a most fertile soil of a specific culture.

Incidentally, two analyses have explicitly pointed out that both Confucian and Buddhist cultural traditions have played a major role in the rise of industrial East Asia (TU 1989; SHISIDO 1989). Confucian ethics has been compared to the Protestant ethics which, according to WEBER (1963), may have given birth and promote the Western capitalism.

4. Implications and proposals

(a) The rise and fall of Marxism has revealed two human qualities: a cognitive trap represented by propensity of the human mind to create and easily accept universal, all-encompassing myths; and the assured impossibility to achieve any real knowledge by such myths. Humankind should cease for ever to believe in social utopia. Instead, we have to rely upon incessant trials and errors applied as the only effective method for solving concrete, clearly specified problems.

(b) Economic evolution and development are two such concrete problems. A distinction should be made between the two terms. Evolution is a process of spontaneous generations of variants and selection of appropriate variants fitting the requirement of a system in a given environment; its path is unforeseeable. Development implies realization of potentialities inherent to the system, it is contingent upon the thorough knowledge of the system. In contrast to economic evolution, economic development of a country can be conceived as an organized process with set values and goals, depending upon the cultural traditions of the country and upon its capacity to unfold its internal material and spiritual richness and/or to absorb the impulses coming from the experience of other countries. In this sense, development is always self-development (ACKOFF 1988). The majority of the Third World countries are both evolving and developing. An industrialized country can be considered as developed but should not cease to evolve. Biology provides a warning to governments imposing authoritarian regimes and spiritual uniformity: where evolution is stifled, or changed into

devolution (as was the case of the communist countries), degeneration and an „aging catastroph“ appear unavoidable.

(c) The distinction also applies to the topic of this Symposium. The evolution of biotechnology and biotechnological enterprises has no prescription. It pressuposes a large space for free experimentation, for trials and errors. The more numerous and versatile are the experiments, the higher are chances of success. The role of the central authority is to create a playground for researchers and enterpreneurs - essentially the market and political democracy - and to supervise that the rules of the game be observed by all the participants. Development is country-specific and its stakeholders are politicians, scientists, intellectuals.
In biotechnology, it implies creation of a national policy of biotechnology, emphasizing indigenous resources. Facing the enormous speed of development of biotechnology in industrialized countries, the major thrust of developmental policies in the Third World should be original, creative, and not imitative and emulative - doubtlessly a formidable task. Incidentally, even the U. S. A. is designing its technology development programme by considering the endogenous potential (PHILLIPS 1991). Biodiversity may be one of the niches still not fully occupied (SASSON and COSTARINI 1991; KOVÁČ 1993). An almost complete abandonment of science and technology policy in postcommunist countries is mainly an over-reaction to the previous futile rigid planning and should not be taken over by developing countries.

(d) Development, even in a restricted sense of technological development, is not a simple matter of application of science and technology. The Marxist deification of economy may have its parallel in deification of „hard“ sciences and technology. Emphasis should be shifted to human biology and social sciences. As aptly put by DAWKINS (1987) „our own existence once presented the greatest of all mysteries, but it is a mystery no longer because it has been solved. Darwin and Wallace solved it.“ This ambitious claim sees in evolutionary biology a key to all human problems, including the problem of the sense of life, of human coexistence, of happiness. While this knowledge is forthcoming and the main need may just be to diffuse it to the general public in order to reduce superstitions, fanaticism and intolerance, human knowledge of social life is badly lagging behind, due to underdevelopment of cultural (*i. e.* human and social) sciences. Ignorance of principles of social dynamics, of complex interplays between economy and culture, of the nature of group aggression may be the main obstacle of humankind´s incapacity to master the growing global disequilibrium. It may have been the
main cause of why the attempts of the 1980s to foster development in the Third World virtually failed. The world has not heeded K.Popper´s warning put forward already in 1957 that „social research nowadays has a practical urgency surpassing even that of cancer research“ (POPPER 1986).

(e) If human and social sciences suffer from underrating in industrialized countries, their situation in developing countries is disastrous (see, for instance, DUBE 1982; INAYATULLAH 1989).The fate of the communist countries is a warning: enslavement of social sciences, their transformation into servants of ruling ideology, the prohibition of impartial analysis of societal events not only maintained the society in darkness of illusions and ignorance, but it was also one of the many factors incapacitating „hard“ sciences and technology: the hypertrophy of science and technology research was in substance a sterile undertaking – it had no repercussion in technological and economical advancement of these countries. The sterility of research was aggravated by separation of research from university education – an arrangement running counter with the very essence of scholarship and its function in society. These two mistakes represent most telling warnings for science and technology policy in the Third World.

(f) The thrust of this analysis is the necessity to consider evolution and development as two distinct processes requiring scientific approach, with emphasis upon the involvement of social sciences. In fact, a new brand of social sciences are needed, drawing substantially upon the achievement of biology; hence, biosocial sciences: sociobiology, biopolitics, biopedagogy. It has been stressed that the involvement of industrialized countries in development of the Third World should not be a matter of compassion, of charity, but a vital matter of enlightened self-interest (KOVÁČ 1992). This also holds for the participation of biosocial sciences from industrialized countries in studies of traditions and endogenous potential and thus idiosyncrasies of future development of Third World nations. It may be appropriate to modify the famous slogan of the Communist Manifesto to make a valid appeal: „Intellectuals of the whole world, unite!"

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