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Ideas Confronted with Reality

On the occasion of the EASST Conference in 1994, I re-read the book *Civilization at the Crossroads* (Richta et. al., 1966) for the session on the memory of Radovan Richta. The book was first published in Czech and in 1968 in Hungarian. The authors apprehended and expanded on the paradigm that J. D. Bernal called “scientific-technological revolution”. The technical trends they outlined proved to be true. Perhaps the importance of biological and genetic research was not fully recognized. Computer and information technology also have developed more tempestuously than they supposed. The trends the authors recognized and foretold in the field of automation, robotation and chemical processing came true. Their forecasts on the social and human conditions of the technical development also proved accurate. However they were completely wrong when predicting the interdependence of socialism and the scientific and technological revolution (STR) and the repression of capitalism. This prediction failed as political prognosis.

Between 1975–80 I was the coordinator of the STR researches appointed by the Presidium of the Hungarian Academy of

Sciences. At the same time I also represented Hungary in the international cooperation issue within the COMECON called “Theoretical context of the STR”. In the framework of this project I had a chance to work together with Radovan Richta and Szemjon Mikulinsky.

In those years our experiences began to diverge and differentiate from each other. While Richta and his colleagues worked mostly on theoretical analyses, I directed empirical sociological studies in the fields of R&D and technological innovation with special regard to the chemical, pharmaceutical, oil and gas industries and computer technology. While within the frames of the ideological concept of scientific and technological revolution we maintained our belief that the advantages of the STR and socialism can be related, the results of our empirical researches did not justify this optimism. We analysed the social conditions and mechanisms that were (or rather should have been) the preconditions of the STR. We also regarded the STR as the revolution of the forces of production, but it soon turned out that within socialism, the social conditions that could put this revolution of the productive forces into practice were no present.

It also turned out that practical socialism is deprived of the factors which Schumpeter regarded as the socio-economic preconditions of innovation (technological development). If there is no entrepreneurial elite (for there is no entrepreneurship based on private property), if there is no capital to be mobilized, if there is no profit motivation to promote development, if the motivators do not impact the scientific-technological development, if the companies are not sensitive to changes in prices, if there are no real market conditions, etc., then for lack of these structural preconditions, innovation is an “alien body” or a mere isolated “enclavé” within socialism.

We summarized our conclusions in the statement that in our country (an supposedly in the other socialist countries as well) the STR doesn't manifest itself as the revolution of the forces of production but as the revolution of the social institutional system prohibiting the STR. So while Richta and his colleagues regarded the socialist social system as the socio-political lever of the STR, we, on the contrary, got to the thesis that the STR is restrained and obstructed by the existing socialist conditions or the socialist nature of these conditions. The book called *Socio-economic Obstacles of Innovation* that I published in 1985 reverses the socialist STR paradigm already in its title. (The titles of a few chapters illustrate this concept: History of a failure: Success in the “Hungarian way”; Complaints of industrial designers; Obstacles in the sphere of research; Difficulties of the industry; Difficulties between research and production; Influence of shortage on R&D activities; Internal conditions of our value system etc.)

Naturally when we identified the socio-political institutional system as the condition prohibiting the unfolding of the STR, we didn't get as far as the denial of socialism as a social formation. At that time I personally shared the belief that socialism could be dynamized. I accepted the concept called “reform-paradigm”. We did believe that socialism could be reformed. Most of us gave up this illusion as late as the second half of

the '80s. When we suggested a “radical reorganisation” of the socio-political institutions, then it was not the restoration of capitalism based on private property or parliamentary democracy based on a multiple party system that we had in mind. We had been living in the belief for a long time that a “socialist market economy” was feasible and that democracy could be enlarged within the single party system.

In the Preface of our research report I indicated “the acceleration of the dynamism of the social conditions” as the main task in the process of creating the conditions of the success of the STR. That means we then did not step out of the system. We criticized it but we trusted in the possibility of its evolutionary development. My colleague, the philosopher Péter Rádi, was perhaps the most radical. This is how I summarized the paper he wrote for the book I edited:

Just as the mediaeval technological revolution had meant the preparatory phase of the industrial revolution, Rádi argues, the present period is also a preparatory phase of a future scientific-technological revolution. The scientific-technological preconditions already exist, but the radical transformation of the relations of production has not yet occurred. Perhaps the authors' most doubtful thesis is that the socialist countries have not yet experienced the radical transformation of the relations of production. ... However our empirical investigations seem to justify Rádi's argument that – also under socialist circumstances – the present-day social and institutional relations constitute the greatest obstacles to the acceleration of the technological development (Farkas, 1962)

It might be clear from the text that Rádi didn't presuppose the existence of the STR even in the case of the capitalist countries, that is they were also in the preparatory phase. The text also shows that I regarded the STR as something existing in its embryonic form even in the socialist countries, its development being restrained

and obstructed by the social conditions of socialism. In terms of politics this was the maximum that we could afford to state. What I have said might show that I radically reversed the Richta hypothesis: Socialism is not encouraging but retarding (or at least obstructive to) the scientific-technological development. For the sake of the truth I have to add that I made an attempt to reconcile this contradiction by stating that our social conditions had not yet taken up a socialist type and for this reason it was necessary to perfect them by reforms. This was the illusion we gave up in the mid-1980's.

In my present-day opinion the Richta paradigm of the STR (as phenomenon related to socialism) fell into the trap of modernism. Three important logics are related to modernism: the functional division of labour, the state bureaucracy and technology. Perhaps it was in terms of the logics of technology that the former socialist countries approached best the immanent needs of the STR. A rather large R&D potential was built, technological and engineering education was given special emphasis, a relatively high percent of the GDP was spent on scientific-technological development etc. Naturally, due to the lack of capital, the Cocom-list and other factors, the efforts didn't produce the intended effects – not even in the field of technology. As for the logics of the functional division of labour, the conditions of modernity we not fulfilled at all. The institutional magma of the division of labour is the market. In lack of a real market, people could not be rationally distributed between production and reproduction, between the socially crucial factors of distribution and redistribution. The practice and particular quality of this logic is defined by the way people are distributed among different functions, by the proportion between freedom and necessity in the process of distribution and whether people are hierarchically distributed among functions or not. If they are, what are the arranging principles of the hierarchy and how it can be justified according to the criterion of dynamic truth.

The logics of the state bureaucracy – we know it well by now – did not conform to the conditions of modernity for it was deprived of plurality and autonomy that are preconditions of the practice of freedom. Within the frames of the logic of the division of labour the system created a network of pathological control which through the politics of merciless and persistent “supervision and punishment” forced everybody to fulfil solely the function forced upon him centrally. This was completed by the totalitarian political system of the society that within technology, forced an accelerated industrialization. This phenomenon is more in contradiction than in conformity with the STR. Hence the particular logics of modernity were separated and became incompatible. The main source of the conflicts is that one of the logics strives to force its own “institutionalized fantasies” and way of functioning upon the other ones. In the Soviet type systems the worst kind of politics operated: politics as “techné”, or as “realpolitics” and as a manipulative, technological power that reduced masses of people to their mere functions. A special type of politics was in power which had technological inclinations.

The other book by Richta and Mikulinsky was published in 1973. I published a review and my views on this book in the journal *Science and Public Policy* (Farkas, 1974). The way I see it today is that this collection of articles didn't go beyond the Czech volume published in 1966. It is full of repetitions and redundancy, it is vigorously apologetic and contains few facts.

The next collective book was published under the title *Socialism and Science* (Richta & Mikulinsky, 1981). I was one of the its authors and editors. I wrote a review on it for a *Richta Memorial Book* edited by A. Rahman (New Delhi). I don't know whether the Memorial Book has been published or not. I quote a short version of the text here as it was published in my reader in English (Farkas, 1991).

The new book intended to summarize the new events in science and cognition in the

following points. Firstly, the authors state the Marxist concept of science as a cognitive phenomenon on the one hand, and a social phenomenon on the other. This concept is to negate those vulgar theses which many scholars wanted to ascribe to Marxists. According to the Marxist concept, the subject of science is the whole society and not the individual researcher. This means that – under socialist circumstances – science can be acquired by workers, too, and the work of the intelligentsia is to a great extent permeated by the ideas and methods of science, which will in turn lead to the elaboration and application of the theoretical foundations of social planning and management.

Secondly, the social functions of science also undergo a substantial change. In their book, the authors illustrate the inner relationship of the complex of functions and their historical changes. These functions include: the cognitive, ideological, social regulating, productive and educational aspects, and those aimed at changing the social subject or those aimed at transforming nature, etc. The authors point out that such a development of functions transcends the framework of capitalism and it can be integrated only under socialism, in the course of the joint development of man and society.

Thirdly, the inner structure of science also changes. For example, trends like the rise of mathematization and intellectual technologies transform the structure of science. The function and structure of science is fundamentally based on two sources. One of them, along the classical Newton-Locke-Descartes-Bacon lines, was already known and recognized earlier, and it was formulated in the process of transforming nature. The Marxist-Leninist programme called attention to the second source. This concentrates the efforts of science on social development and the transformation of society.

Fourthly, in the socialist countries various theoretical environments emerge for science. The Party – embodying the interests of

workers and all social strata – can draw up a strategy for the development of science. In this plan the emphasis is placed not only on the capacity of science for developing material production, but also on its capacity for serving society in broader terms, i. e. in the sphere of culture, social management, the developing of human potential and the service sector. In the process of social reproduction the general social effect of science gradually emerges.

Fifthly, the study also emphasizes that in socialist circumstances the development of science entails dangers and negative consequences. The accidental contradictions of science and culture, problems of ecology, etc. may also appear in socialist countries, but their solution is not hindered by obstacles of principle. In socialism science becomes a universal force of transforming society which also includes the many-sided development of the individual.

Sixthly, a new historical type of science emerges. It differs in principle from the science which developed during the Industrial Revolution in three aspects: as regards its subject; its approach to nature and society; and its inner structure and organizational forms. Science has three major historical types. In the first type, in ancient times, the doctrine and the epistemé took shape. Industrial science was born in the age of bourgeois revolutions. At present, the third type of science is emerging on the social basis of socialism.

Radovan Richta was a major contributor to these ideas. He has marked contemporary understanding of science through his unfathomable influence upon some of its trends. It is beyond question that this former text that I wrote in the mid-1980s at numerous points relates to Richta's concept of the STR. At that time, in spite of my own empirical research experiences, I had not broken with the Marxist ideology of the STR. Still it elucidates that besides the usual Marxist optimism Richta (and some of his co-authors) were beginning to acquire a critical attitude towards the faults of socialism. The

fact that humanism was given a more intense emphasis within the concept might be understood as a sigh that trying to compensate for tensions in the social structure, we began to focus more on the human factors.

Summing up I would like to say that the books published by Radovan Richta and his co-authors were not justified by history. At the same time the awareness and the identification of the problem raised by history is inherent in those works just as well as the ambition to bear and labour it. They accepted the big "challenge" of the modernism and, through restrained by socio-historical limits, they made an attempt "to answer" this challenge. Quoting the hero of the novel "One Flew over the Cuckoo's Nest" by Ken Kesey: We might have failed to lift the big stone but we at least tried to do it!".

REFERENCES

Farkas, János

1974 "Review on Man, Science, Technology ed. by Richta and Mikulinsky" Science and Public Policy (July).

Farkas, János

1982 A tudományos-techikai forradalom társadalmi előfeltételei és következményei. (Social Preconditions and Consequences of the Scientific-technological Revolution. Summary in English). Budapest: MTA SZKI.

Farkas, János

1985 Az innováció társadalmi-gazdasági akadályai (Socio-economic Obstacles of Innovation, In Hungarian). Budapest: Közgazdasági és Jogi Könyvkiadó.

Farkas, János

1991 "A New Paradigm of Science and Scientific-technological Progress: In Memory of Radovan Richta" In A Sociological Analysis of Science and Technology. Erlangen Osteuropa Studies 4. Erlangen-Nürnberg: IGW.

Richta R et. al.

1966 Civilizace na rozcesti. (English translation: Civilization at the Crossroads 1967). Prague.

Richta, R & Mikulinsky (eds.)

1973 Man, Science, Technology: A Marxist Analysis of the Scientific-technological Revolution. Prague: Academia.

Richta, R & Mikulinsky (eds.)

1981 Socialism and Science. Moscow: Publishing House "Nauka".

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