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Developed Socialism:
Theoretical Problems

Resources and Economic Growth

Present-Day Development
of the Newly-Free Countries

Interaction Between Society
and Nature

The History of Science

A Physicist
on the Specific Features of Art

The Origins of Man and Society

3

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To the Reader

Numerous scientific works on social, economic and cultural developments in the USSR have appeared to mark the 60th Anniversary of the Great October Socialist Revolution. This issue also carries a contribution by Academician **Pyotr Fedoseyev,** Chairman of our Editorial Council.

Economics

Academician **T. Khachaturov** analyses the criteria and indicators of social production efficiency whose steady increase is a law-governed trend of economic growth under socialism.

R. Andreasyan and **A. Solonitsky** examine new forms of relations between the developed capitalist and the developing countries in connection with the economic situation caused by the energy crisis.

V. Rymalov offers an analysis of the contradictions within the agrarian and raw-material sphere of the world capitalist economy, which are indicative, in particular, of changes in the historically established system of the international capitalist division of labour.

The History of Science

Academician **B. Kedrov** gives a materialistic interpretation of the revolution in the natural sciences, which began in the mid-1890s and is still continuing.

V. Kelle and **S. Mikulinsky** treat the theory of science as an integral sphere and a means of self-knowledge of the sciences developing in the conditions of the scientific and technological revolution.

The article by **I. Blauberg** is devoted to the history of the systems approach in research. It is based on little known materials that first appeared in Russian publications at the beginning of the present century.

Philosophy

I. Andreyev analyses the latest data about the origins of man and society to reaffirm the fruitfulness of the dialectical method used by Engels in his article "The Part Played by Labour in the Transition from Ape to Man".

In the opinion of **I. Laptev**, the connection between the use of nature, whose significance grows as science and technology advance, and the processes of social development is becoming ever more evident.

Methodology of Historical Research

Drawing upon works by Western scholars, **N. Smolensky** examines some aspects of the correlation between concept and reality, the dynamics of the emergence and evolution of historical concepts as an important area of the logic of historical research.

Developing Countries

R. Avakov analyses various Western conceptions and criteria of underdevelopment in the light of the realities of the scientific and technological revolution and notes that it is a methodological mistake to use old yardsticks when approaching new problems.

Aesthetics. The Sociology of Creation

Corresponding Member of the USSR Academy of Sciences **E. Feinberg**, a physicist, makes an attempt to answer the question: Why is art necessary and indispensable? He comes to the conclusion that without art mankind would not be able to exist.

M. Kurginyan writes about the specific features of the present-day approach and interest taken by Western scholars in sociological research in the theory of literature.

In this issue as usual our readers will find extensive coverage of various international, bilateral and Soviet meetings of social scientists, and a variety of bibliographical materials.

Our Questionnaire

Here is some preliminary information about our readers' replies to the Questionnaire published a year ago, in *Social Sciences* No. 3, 1976.

We have received replies from more than 30 countries and are happy to state that practically all sections of our journal are favourably received.

In response to our readers' requests made in their replies to the Questionnaire, we are publishing already this year articles on a wide range of the problems our readers are interested in and, in particular, on various aspects of peaceful coexistence, the economy of mature socialism, social and cultural development in the socialist countries, the history of Russian revolutionary traditions, the specific features of the development of the Third World countries, polemics with various foreign sociological concepts, the class nature of fascism, the impact of the scientific and technological revolution upon the structure of economic ties, space exploration, ecology, the theory of science, etc.

We intend to continue giving coverage to topics of interest to our readers and once again express our sincere appreciation of their goodwill and kind cooperation, to promote which we shall spare no effort. More detailed information about the Questionnaire and our plans for the future will be given in one of our next issues.

As always readers' comments and suggestions will be welcomed and will be given thoughtful consideration.

Developed Socialism: Theoretical Problems

PYOTR FEDOSEYEV

The theoretical problems of developed socialism are among the most topical problems of Marxism-Leninism today.

Having summed up the revolutionary creative practice of the Soviet working people on the basis of Lenin's idea about mature socialism being an important stage on the way to communism, the 24th Congress of the CPSU drew the conclusion that a developed socialist society had been built in the USSR.

A great theoretical contribution to the elaboration of the Marxist-Leninist theory of the developed socialist society was made by the 25th Congress of the CPSU, and the Report of the CPSU Central Committee on the Immediate Tasks of the Party in Home and Foreign Policy is a programmatic document for communist construction.

The 25th Congress of the CPSU, elaborating the propositions of the previous Congress in deeper and more concrete terms, first, gave a comprehensive characteristic of the developed socialist society in the USSR and formulated the tasks in perfecting it in various spheres: economic, socio-political and spiritual; and second, formulated the economic strategy for the present stage, that is, the stage of mature socialism, and set out the tasks not only for the next five years, but also for a longer period ahead.

The Leninist Party's conclusions concerning the stages in building the new society, the duration of the socialist phase and the historically

An abridged text of the report by Academician Pyotr Fedoseyev, Vice-President of the USSR Academy of Sciences, and Chairman of the Social Sciences Section of the Presidium of the USSR Academy of Sciences and Chairman of the Editorial Council of this journal, given at an All-Union Scientific and Theoretical Conference on "The 25th Congress of the CPSU and the Development of Marxist-Leninist Theory" (October 1976, Moscow).

important stage of developed socialism within the framework of that phase have rested not only on Soviet experience, but also on the practice of other socialist countries which face the task of bringing out the perspectives of their advance. In addition, the CPSU's generalisations have largely stimulated joint elaboration of these problems and helped to determine the common theoretical and political stand of a majority of the socialist countries.

The 25th Congress of the CPSU was a striking demonstration of the common views held by the Communist and Workers' parties of the socialist community countries on the key problems in socialist construction and on the basic regularities of its development. This was reaffirmed by the fraternal parties' congresses held before and after the 25th CPSU Congress. These congresses adopted policy documents envisaging the creation of a developed socialist society in accordance with the specific national conditions in each country and with an eye to the experience gained by the Soviet people in its creative activity. The fraternal parties also take account of our Party's theoretical contribution to the elaboration of problems arising in the construction and development of socialism and the ways of its growth into communism. The CPSU's theoretical activity has met with broad international recognition and has acquired practical significance for the nations taking the path of radical social reconstruction.

Virtually all the various approaches to the problems of socialism have now been put to the test on the strength of the historical experience of the contemporary epoch. The diverse conceptions of "democratic", "humane" and "market" socialism propounded by many Social-Democratic leaders have now been debunked not only theoretically but also in the course of life itself.

The "Left"-opportunist "barrack-room communism" conceptions, which had been expressed in their ugliest form in the denial of the economic laws of socialism and the implantation of petty-bourgeois egalitarianism and bureaucratic-military regimes of chauvinism and hegemonism have not stood the test of history either.

Against the background of the historical triumphs of socialism in this and other fraternal countries, we have every reason to appreciate the great importance of our Party's consistent struggle in the period of socialist construction against the Right and "Left" opportunists, who variously coalesced either with the social reformists propounding "democratic socialism" or the Leftists defending their adventurist conceptions within the liberation movement.

The construction of the developed socialist society in this country and the process of its construction in other fraternal countries are the result of creative enrichment and consistent application of the Marxist-Leninist principles of socialism in practice. It is no exaggeration to say that the historical fact of these principles having been implemented by our parties, the working class and all the working people in the socialist community countries by dedicated labour effort is their most important achievement.

The course of socialist construction has helped to confirm, express in concrete terms and give greater depth to the Marxist-

Leninist tenets concerning the regularities and basic stages in the formation of communist society. Life has borne out the correctness of the theoretical predictions concerning the three qualitatively distinct historical phases—the transition period, socialism and full-scale communism—through which the emergence and development of the new socio-economic formation has to run. The practice of the class struggle has shown beyond any doubt that in the transition from capitalism to socialism there is need for the dictatorship of the proletariat. Masses of people have been convinced from their own experience that the proletarian dictatorship is a much higher type of democracy than bourgeois democracy, whose content is the dictatorship of an exploiting minority. The proletarian dictatorship emerges in the struggle against the dictatorship of the bourgeoisie and serves as an instrument for protecting the revolutionary gains against encroachments by the overthrown exploiting classes and foreign imperialists. Experience shows that the state of the proletarian dictatorship has to fulfil its historic mission until the full and final victory of socialism, when it grows into a socialist state of the whole people.

The fraternal parties have drawn the lessons from the crisis situations taking shape in some countries because of the subversive activity of anti-socialist elements and imperialist instigators, and have reached the fundamentally important conclusion that underestimation of the tasks of consolidating socialism after the construction of its basis is fraught with great complications and dangers. They have exposed the flimsiness of the attempts to include socialism within the transition period or to regard it as a short stage of social development. It was made quite clear that entrying the phase of full-scale communism cannot start immediately upon the full triumph of socialism, and that this calls for a more or less lengthy period of development on the basis of socialism to realise its latent objective potentialities and advantages. At the same time, the efforts to present socialism as a relatively independent social formation have not stood the test of life or been accepted either.

The scientific generalisation of real processes has produced an elaborate characteristic of the social substance of developed socialism. The developed socialist society is a law-governed stage in the formative period of the communist system, signifying that socialism has finally triumphed and been fully established in every sphere of social life, and that the premises have been created for the full and allround manifestation of the potentialities and advantages of the socialist system and for the realisation of practical steps in gradual transition to the higher phase of communism.

Developed socialism is characterised by a higher level of the productive forces and a greater degree of maturity of its relations of production, which are qualitatively distinct from those of the preceding period. The basic principle of socialism—from each according to his abilities, to each according to his work—is most fully realised. In the mature socialist society, all its facets—economic, socio-political and ideological—are harmoniously developed, and this helps to create highly important material and spiritual premises for the

full flowering of the individual and the establishment of the socialist way of life.

In working to perfect socialist society, the CPSU and the other fraternal parties have done much to solve the present-day problems in Marxist-Leninist theory. This includes above all their conclusions about the ways to build up the material and technical basis of developed socialism and communism; socialist economic integration as the material foundation for the community of fraternal countries; improvement of socialist relations of production and their economic mechanism; ways to overcome the substantial distinctions between town and country and between workers by hand and by brain, and to change the social class structure of socialist society; the development of the socialist state and perfection of socialist democracy, and the conditions in which the state of the proletarian dictatorship grows into the state of the whole people; the growing role of the Marxist-Leninist Party of the working class in the developed socialist society as the Party of the whole people; the ways to establish and perfect the socialist way of life; the moulding of the new man and his harmonious development.

We are aware that a great amount of scientific research is to be done by us. Our society is now at a stage when the general considerations of principle concerning the stages in the emergence of the communist formation need to be filled up with concrete content, and the concrete lines and means for preparing the premises for transition to the higher phase of communism determined. Of primary importance among these questions is clarification of the ways of building up its material and technical basis, improvement of socio-economic relations, and development of the state of the whole people and the socialist way of life.

In analysing the problems of mature socialist society, the CPSU has warned against two extremes.

First, it is wrong to run ahead of events and to try to leap over the necessary stages. One should bear in mind that developed socialism is not yet communism, and that it is a stage which is within the framework of the socialist phase. In practice this means that at the present stage society is faced with the task of further boosting the productive forces and building up the material and technical basis of communism through the further use of material and moral incentives, economic instruments and the laws and principles inherent in socialism.

Indeed, at this stage the need is not to fold up but fully to practice the fundamental principle of socialism: from each according to his ability, to each according to his work. Social progress is bound to be slowed down by any attempt to ignore this principle and to supplant it with an egalitarian distribution of the articles of consumption. It is common knowledge that the fuller the practical application of the principles and advantages of socialism, the greater the success in creating the socio-economic premises for transition to the higher phase of communism.

Second, it would be equally wrong to forget that improvement of developed socialism amounts to an advance towards communism, and that it is at the stage of mature socialism that the material and technical basis of communist society is being created, and the chief objective and subjective premises are being formed for ensuring the immediate growth of the new formation from the first to the second phase. The important thing is to see the proliferating elements of communism within the system of socialist social relations and in the sphere of consciousness and way of life, and work to establish and consolidate them, because that is the only basis for the transformation of socialism into communism.

The task is to analyse the regularities underlying the advance towards communism in organic conjunction with a study of the meaningful problems of developed socialism and elaboration of practical measures promoting their most successful solution.

THE ECONOMY OF DEVELOPED SOCIALISM AND PROSPECTS FOR THE CREATION OF THE MATERIAL AND TECHNICAL BASIS OF COMMUNISM

As a result of the successful fulfilment of the early five-year plans, socialism had been built in the main in the USSR and the corresponding material and technical basis created by the end of the 1930s. The level of material and technical development attained in that period helped the Soviet Union to win not only a military but also an economic victory in the Great Patriotic War against nazi Germany, which had at its disposal the resources of virtually the whole of Europe.

But a comparison of the prewar level and the present level of economic development achieved during the 9th Five-Year Plan period gives good grounds for saying that the material and technical basis which is adequate to developed socialism far surpasses the prewar material and technical basis in scale, maturity and efficiency.

In 1975, that is, at the end of the 9th Five-Year Plan period, fixed assets in the Soviet economy were worth over 800 thousand million rubles, or nearly 11 times more than in 1940. Capital construction has assumed gigantic proportions. The volume of capital investments in 1975 was 17.7 times greater than in 1940. The gross social product and the national income multiplied 11-fold. Industrial output increased 17-fold, including a 23-fold increase in Group A, and a 9-fold increase in Group B. Gross agricultural output increased by nearly 130 per cent.

The country's positions in the world economy have undergone a marked change. On the eve of the war, the Soviet Union accounted for something like 10 per cent of world industrial output, and in 1975 for 20 per cent.

However impressive the comparison of the quantitative indicators may be, the obvious fact that the material and technical basis of mature socialist society tends to develop on a qualitatively new basis is even more important. This is vividly expressed in the creation and

accumulation of technically ever more perfect means of labour and the spread of industrial methods to all the sectors of material production without exception, and the switch from extensive to intensive economic development.

There is especially rapid development today in the electric-power, atomic, oil and gas, chemical and petrochemical industries, and in engineering, including instrument-making and radio-electronics. In 1975, these industries accounted for 37 per cent of industrial output (in wholesale prices of January 1, 1975), and by 1980 the figure is to go up to 41 per cent. Their product, as Leonid Brezhnev aptly put it, is a kind of catalyst which serves to accelerate the transfer of the whole economy to the most modern technical and technological basis.

A fundamental feature of the material and technical basis of mature socialism is that it has made possible and necessary a complex approach to production and social problems while carrying out a deep-going orientation of the economy upon the solution of the diverse problems of raising the people's well-being. At the earlier stages of socialist construction, the level of production was not high enough to make it possible simultaneously to meet the accelerated development of the productive forces and the growing material requirements. These problems had to be ranked in a definite sequence of priorities. At the present stage, national-economic plans are increasingly oriented upon social problems, and this is an objective regularity of the developed socialist society.

The rising level of socialisation and organisation of production, and the formation of production and scientific-cum-production associations may be regarded as a highly important qualitative feature which is inherent in the material and technical basis that is adequate to developed socialism. By the end of 1975, there were 2,300 such associations, and they accounted for 24 per cent of the sale of manufactured products.

The associations are being justly regarded as a qualitatively new phenomenon in economic development because they are not a mechanical aggregation of enterprises but a coherent production and economic complex organically fusing science and production and making extensive use of specialisation and cooperation.

The transformation of science into a direct productive force under the current scientific and technological revolution makes it imperative for science and production to be even more closely linked with each other. This objective tendency is expressed in the broad development of the most diverse forms of integration of scientific establishments and industrial enterprises. Within the framework of scientific-cum-production associations, conditions are created for a marked acceleration of the pace at which scientific and technical achievements are ploughed into production.

There is ever broader spread of associations in agriculture and its allied sectors, which are known as agro-industrial complexes. The establishment of large-scale building and assembly associations is an urgent task, meeting the specific requirements of the present stage in the development of the Soviet economy, helping to improve the

organisational structure of the economy and of economic management, and enhancing the efficiency of the material and technical basis of socialist society.

A distinctive feature of the improvement of the material and technical basis of socialism at the present stage is the establishment of territorial-production complexes helping to bring about a more rational location of the productive forces and multisectoral or specialised development of vast territories in the heart of the country and also in Siberia, the Soviet Far East and Central Asia. Among these are some ongoing programmes like the development of the Non-Black Soil Zone of the RSFSR, the industrial-agrarian zone of the Kursk Magnetic Anomaly, the West Siberian territorial-production complex, the cluster of Angara-Yenisei complexes, the vast area of the Baikal-Amur Railway Line, the huge motor-car project on the Kama River, etc.

It is safe to say that these great projects and giant enterprises now going up in this country and characterising the material and technical basis of developed socialism will also work for communism.

The main condition for accelerating the construction of the material and technical basis of communism is to bring about a conjunction of the achievements of the scientific and technological revolution with the advantages of the socialist economic system. In the general theoretical plane, this problem hinges on the understanding of the dialectic of the productive forces and the relations of production. Marxist-Leninist theory has established that the correspondence of the relations of production to the character of the productive forces is a general law determining the development of social production. By contrast to capitalism, under which there is a growing contradiction between the social productive forces and the private capitalist form of property, the social character of production under socialism is organically combined with the social form of property in the means of production. That is why scientific and technological progress under capitalism, by accelerating the growth of the productive forces, tends to sharpen the contradiction between the social character of production and private capitalist appropriation, whereas under socialism scientific and technological progress, the chief motive force behind the development of the productive forces, runs under the stimulating influence of socialist relations of production.

The problem of bringing about a conjunction of the scientific and technological revolution with the advantages of the socialist system in the USSR at the present stage amounts to the problem of improving the relations of production and forms of economic management, in accordance with the requirements of social practice. Any lag in the forms of relations of production and especially in the sphere of management may well hamper and limit the scope of the scientific and technological revolution and reduce its impact on the accelerated development of the socialist productive forces. That is why the Party has so persistently and resolutely set the task of further perfecting the relations of production in general, and the methods of managing the

whole of economic construction and in particular the planning of the national economy.

It is now hardly possible to produce a full-scale and concrete characteristic of the material and technical basis of communism, of its quantitative and qualitative parameters. The main thing is to analyse its socio-economic substance.

The creation of the material and technical basis of communism is the foundation for transforming socialist social relations into communist, for a fundamental change in the way of life and the moulding of the new man of the communist society.

The crucial socio-economic criterion for the construction of the material and technical basis of communism is the creation of conditions ensuring the achievement of the highest labour productivity, the conversion of work into a prime vital need, full satisfaction of the reasonable requirements of all members of society in accordance with rational standards, and a gradual transition to the communist principle of distribution.

In the past few years, there has been a growth of the tendencies in scientific and technological progress and economic development which gradually go to shape the make-up of the productive forces of the future communist society. Among these are:

— creation of fully mechanised and automated technological processes ensuring a higher social labour productivity than that under capitalism, enhancement of the attractiveness and creative character of labour, and solution of the problems in environmental protection;

— reconstruction of the fuel, energy and raw-material basis of the economy with the use of new sources of energy and materials, and a reduction of dependence on the limited fuel and raw materials of natural origin;

— completion of the process of industrialisation in agriculture as a result of its full mechanisation and effective control of biological processes;

— development of the production infrastructure on the basis of an integrated transport system and an integrated and automated communications system;

— enhancement of the efficiency and quality of production, implementation of fundamental improvements in the sphere of management with the use of electronic computers, establishment of an automated system for the storage, processing and transmission of information.

The steep rise in labour productivity has been helping to increase the leisure time available to the working people in socialist society, to accelerate the development of the services, public health, science, culture and education. Consequently, the creation of the material and technical basis of communism contains an organic implication for ever greater social orientation of scientific and technological progress in the mature socialist society. The socio-economic criterion for the construction of the material and technical basis of communism is the starting point for the elaboration of the CPSU's long-term socio-economic strategy, which is realised in national-economic plans.

Let us recall that the 25th Congress of the CPSU adopted a decision to draw up a long-term economic-development plan until 1990. Preliminary studies show that this 15-year period will bring about a doubling, as compared with the preceding period, of all the material and financial resources, ensuring a vast extension of our potentialities in tackling large-scale social problems and moving much closer to communism.

In pursuance of the assignment set by the 25th Congress of the CPSU, work is being carried on to formulate a Comprehensive Programme for scientific and technological progress and its socio-economic consequences for the 1976-1990 period.

This Comprehensive Programme will spell out in concrete terms the CPSU's long-term socio-economic strategy, as formulated at its 24th and 25th Congresses. It will become an organic part of current and long-term planning and will provide the basis for elaborating highly important economic programmes aimed to solve the key socio-economic and scientific and technical problems facing the developed socialist society.

PERFECTION OF THE SOCIAL STRUCTURE AND POLITICAL ORGANISATION OF SOCIETY

Under developed socialism, deep changes are a characteristic of the social structure. This is expressed above all in the growing numerical strength, share, cultural and technical standards and political activity of the working class, the chief force in the communist transformation of society.

In 1939, when socialist society in the USSR had been built in the main, the working class made up 33.5 per cent of the population. In 1976, it made up 61.2 per cent.

Today more than two-thirds of the workers have an 8-year or 10-year secondary education, as compared with only eight per cent in 1939. The younger generation of the working class now consists mostly of young men and women whose education is, as a rule, not lower than the secondary school level. The improved general educational training of workers helps them quickly master the intricate modern technology and hardware, results in higher professional skill standards and ultimately leads to a progressive reduction in the distinctions between manual and mental labour, and between the working class and the scientific and technical intelligentsia.

The working class is society's chief productive force, the creator of the basic material values, the conductor of scientific, technological and social progress and the vehicle of an advanced ideology. It is the chief transformative force in every sphere of social life, uniting all the social groups and big and small nations on the basis of their common world outlook, common purposes, ideals and ethical rules.

The CPSU, the vanguard of the working class, embodies its leading role in its own activity. Workers make up 41.6 per cent of the Party's membership, and 58 per cent of new members. It is through

the Party that the working class exerts its decisive influence on every aspect of social life in socialist society.

Fundamental changes have also taken place in the conditions of the Soviet peasantry. Collectivisation meant a deep historical transformation of the social structure of Soviet society, for the class of small owners was converted into a new socialist class of cooperated peasants.

The formation of the intelligentsia as a socialist social group has been completed. In origin and activity it is closely bound up with the working class and the collective-farm peasantry.

Consequently, the construction of developed socialism in the Soviet Union led to the establishment, for the first time in history, of the people's socio-political and ideological unity, leading to the formation of a socially homogeneous society, consisting exclusively of socially similar-type socialist classes and social groups.

However, that does not mark the end of the changes in our social structure. The Party does not regard as frozen or immutable a social structure in which there are two different classes—the class of workers and the class of peasants—existing on the basis of different forms of property. The Party's assumption is that the distinctions between these classes are mobile and will reduce so as to ultimately disappear altogether.

At the stage of developed socialism the alliance of the working class and the peasantry is being intensively consolidated, as these two friendly classes move ever closer to each other with the real prospect of the distinctions between them being obliterated altogether. This also fully applies to the relations between these classes and the intelligentsia.

The Party has set itself the programmatic objective of building a classless society, achieving complete social homogeneity by eliminating the class distinctions themselves and every trace of them as well. This is possible only by overcoming the still existing distinctions between town and country and between mental and manual labour.

Noteworthy processes have been going forward in this direction within the mature socialist society.

The general boosting of the economy helps to bring about substantial changes in the conditions of agricultural production. The collective farms continue to be a stable form of the socialist organisation of the peasantry, but they have become much larger and more powerful. The socialisation of production has been rising to an ever higher level. In this context one must note the highly important processes of intercollective-farm cooperation and agro-industrial integration. The technical facilities per farmer have been sharply increased. Living standards among the collective-farm peasantry have risen, and their working and everyday conditions have been changing, as the countryside steadily moves closer to urban standards in the conditions of both production and everyday life. Here, the state farms, which are large-scale enterprises owned by the whole people, have a tremendous role to play. Since 1940, their number has multiplied almost 4.5-fold. There are more than 8 million men and

women now working on the state farms, a sizable section of the working class, making up more than one-third of all those employed in farming.

In the developed socialist society, these processes are also intensified. The establishment of agro-industrial complexes marks not only a new stage in economic progress in the countryside but also major social changes, because these complexes are a real and tangible evidence that the collective-farm peasantry is moving closer to the working class and that the distinctions between them are being obliterated. Agro-industrial integration provides a material basis for overcoming the distinctions between town and country.

The exceptionally rapid growth in the number of those employed mainly in work by brain is characteristic of developed socialism. From 1941 to 1975, the number of specialists in the economy went up from 2.4 million to 22.8 million, or more than 9 times. This rapid growth is a reflection of the conjunction being achieved between the scientific and technological revolution, and the advantages of socialism.

The substantial distinctions between the working class, the collective-farm peasantry and the intelligentsia are being overcome through an approximation of their status with respect to the means of production and of their skills in labour. This implies the raising of categories of working people engaged in relatively simple and monotonous labour to the level of those whose labour is more sophisticated and contains elements of creative activity.

This process goes on as two interrelated tasks are being fulfilled. One of these is the transformation of industry, agriculture, transport, communications, the public utilities and the services into sectors where comprehensive mechanisation and automation of every element of production are brought about through the introduction of the most important achievements of the scientific and technological revolution. The other task is to perfect general and specialised education, and to raise each worker's ideological and political standards so as to enable everyone to engage in creative labour based on modern technology and also in social administration and organisational activity.

It is too early to assume that existing distinctions between mental and manual labour are no more than professional distinctions which have nothing to do with the problem of obliterating social distinctions. Of course, the qualitatively new state consists in the fact that workers by brain, especially scientists, technicians and agronomists involved in material production, have been moving ever closer to the workers and peasants in the creation of the material and technical basis of communism, in the common endeavour of communist construction. But they have yet to merge with each other. Elimination of the essential distinctions between workers by brain and by hand is a necessary condition and evidently the culminating point in the formation of the classless and socially homogeneous society.

All of this shows that metaphysical notions about the social processes going forward in this country are untenable. Nor has there

been any confirmation in practice or recognition in theory of the assumptions that the intelligentsia has been dissolved within the working class or that the working class has been transformed into an intelligentsia. Historical experience has borne out the Marxist-Leninist idea that the complete social homogeneity of society will be established through bringing closer together socialist classes and social groups.

The Soviet people, a new historical community of men, has demonstrated in practice the gradual obliteration of class distinctions and the formation of complete social equality. There is every reason to assume that the obliteration of class distinctions within the new historical entity will take place before national distinctions are overcome, for these will be with us for a long time to come.

The socio-political and ideological unity of Soviet society is the basis for the consolidation of the big and small socialist nations' international cooperation and fraternal friendship. As the big and small nations in this country draw closer to each other, the working class plays the part of a chief vehicle of internationalism.

In the past few years, many researchers—philosophers, economists, lawyers and historians—have been giving markedly more attention to the theoretical formulation of problems connected with an assessment of the economic activity of the state, the interaction of the political superstructure and the economic basis, and the balance between economics and politics in the developed socialist society.

Let us note that they have given different evaluations to the objective growth of the economic role of the socialist state.

Some assume that no fundamental changes have taken place in the relationship between the state and the economic basis. They believe that, regardless of the methods used in managing the economy, the socialist state belongs to the sphere of ideological relations, remaining a purely superstructural element and a political and legal organism, while its economic activity is the outcome of its inherent function of organising the economy.

Others, on the contrary, insist that in view of the growing economic role of the state it has already ceased to be a purely superstructural category and largely falls within the basis, and that it exercises its activity in economic management not only as an element of the political superstructure, but also as one which has to some extent become a part of the economic basis.

This view, which largely springs from the intricate processes of economic life, is substantiated by the fact that the state, exercising direct administration of the economy in socialist society, is thereby involved in the fabric of the economic system. Because in this case the state's economic function alone acquires a basal character, it operates as a kind of "dual" institution, which falls partially within the superstructure and partially within the basis.

The ongoing discussion of various aspects of the economic activity of the state has helped to identify a number of important problems requiring further theoretical elaboration. A positive aspect of the discussion is, ultimately, the urge on the part of most of its

participants to comprehend in the light of dialectical materialism the real processes in the management of the economic life of society.

At the same time, this discussion has been largely abstract in character. The arguments presented by some participants have not always been convincing, while the corresponding criticism of the various standpoints has not always been sufficiently meaningful. Thus, critics of the socialist state's "dual" role conception have now and again taken a superficial view of their opponents' stand, oversimplifying the actual changes in the mechanism of interaction between the political superstructure and economic relations, which has assumed ever more intricate forms in the developed socialist society. Meanwhile, the advocates of this conception tend to fragment the functions of the state, thereby to some extent reducing the role of the political superstructure in socialist society.

Of course, even under socialism the state continues to be a political superstructure, but the fundamentally new element here is that it has at its disposal the property of the whole people and effects the planning and management of the economy on the scale of the whole country. That is why it is so important to show in concrete terms the dialectic of the interaction between the superstructure and the basis, the state and economic development in socialist society.

The Marxist-Leninist view of the development of the socialist economic basis helps to strengthen the socialist state, to enhance its role in the solution of social problems and to create the basis for the further development of democracy and the strengthening of the public order. On the other hand, improvement of the political system and of the state forms of administration, together with the consolidation of socialist democracy are a powerful factor in accelerating economic progress, because they make it possible to involve ever greater masses of the population in vigorous revolutionary creativity.

How is the statehood expected further to develop? So long as class distinctions exist, the state continues to be the people's political organ, with the working class playing the leading role. When class distinctions are fully obliterated, when the functions of administration shed their political character, these functions at a definite stage, as Lenin remarked, will be exercised by a non-political state, which will subsequently grow into public communist self-administration. According to Engels, the governance of men will give way to the governance of things and the direction of production processes.

Developed socialism does not entail a weakening but a strengthening of the state system and the further development of all the potentialities of socialist democracy. The decisive factor in this process is the growth of the leading role of the working class and of the Communist Party within the political system of Soviet society.

The Marxist-Leninist doctrine of the Party has been further developed in the documents of the 25th Congress. One should pay special attention to the elaboration of the thesis that the CPSU, having become a party of the whole people, continues to be a working-class party. This is a reflection of the leading role of the working class within the system of socialist social relations, and in the construction

of socialism and communism. The leading role of the working class in the revolutionary movement and the building of the new society has always been exercised through its vanguard, the Marxist-Leninist Party. Now that the new historical community—the Soviet people—has taken shape, now that the collective-farm peasantry and the intelligentsia have adopted the ideology of the working class and have switched to its positions, now that its interests and goals have become those of all the working people, the Communist Party operates as a party of the whole people, while intrinsically remaining a working-class party.

The development of socialist democracy is expressed in the rising political activity of the working people and their more vigorous practical participation in every echelon and level of administration and management. The Soviets have a growing role to play as the chief state form, as representative and elective organs capable of tackling in a complex the most important tasks at the centre and in the localities under the leadership of the Party. The trade unions, the Young Communist League and the numerous social organisations of the working people have a growing role and a large spectrum of functions to perform. There is improvement of the various forms in which workers, collective farmers, office workers and scientists take part in running the affairs of their collectives, and in which collectives of working people take part in tackling various aspects of management in the industries and socio-economic and cultural life, and of the affairs of society as a whole. It goes without saying that the extension of socialist democracy is inconceivable without a strengthening of law and order, legality and social discipline, or without a clear-cut definition and comprehension by citizens of their rights and duties.

The CPSU Programme says that communist society will be a highly organised community of working people. The development and gradual transformation of the socialist state system help to bring together within public communist self-administration the representative organs of the state, the trade unions and other mass organisations of working people.

THE SOCIALIST WAY OF LIFE: AN IMPORTANT FEATURE OF DEVELOPED SOCIALISM

The formation and growth of the economic basis of the developed socialist society, the improvement of its social structure and of national relations, and the advance of socialist democracy have all provided the foundation for the shaping and establishment of the socialist way of life.

The main features of the socialist way of life were vividly described in Leonid Brezhnev's Report at the 25th Congress of the CPSU, when he said: "The atmosphere of genuine collectivism and comradeship, cohesion, and the friendship of all big and small nations in the country, which gain in strength from day to day, and the moral health which makes us strong and steadfast—these are the radiant

facets of our way of life, these are the great gains of socialism that have become the very lifeblood of our reality."

There is a lively discussion among scientists of the theoretical problems bearing on the way of life. Some tend to identify the way of life with economic, political and social conditions. But this approach, in effect, eliminates the problem of actively shaping the socialist way of life, if it is identical with the conditions of human existence. Works written from this standpoint mainly confine themselves to a description of economic and socio-political relations. Others define the way of life as a form of behaviour, as a system of men's vital activity, regarding conditions as the environment. This kind of approach loses sight of the interconnection between men's vital activity and the conditions of their being, and belittles the impact of the social environment on man's consciousness and behaviour.

Most scientists are correctly agreed that the way of life is an aggregation of the forms of men's vital activity closely bound up in a unity with the conditions of socialist reality, and that is the line along which research is being intensified.

Of course, the general character and substance of the way of life should be considered in close connection with the whole complex of the social and cultural conditions of men's social activity and life. But the main thing here is to analyse the dialectic of interaction between material conditions and vital activity, and man's behaviour in society. The Marxist-Leninist approach is that the way of life and men's vital activity and behaviour are ultimately determined by the material conditions and level of development of production and the relations of production. But the material conditions are created by human activity, and are changed and transformed by men's labour in the process of production. Consequently, this is not some external environment or outward form. It is also the basis of human life and the product of human labour.

It is a vital theoretical problem to show the dialectic of this, because that is the starting point for understanding the ways of practical effort to establish the socialist way of life. That is the main task facing scientists.

Socialist social property is the basis of the collectivism and comradeship of all the working people of society, and of the friendship and cooperation of men and women of all nationalities. But collective labour, comradely mutual assistance and the fraternal unity of Soviet people are also a great force behind the powerful development of the social economy and of society's spiritual enrichment.

The socialist way of life is a new historical and social category which has become a reality, and which emerged and has been developing together with socialist society.

Of course, the main thing for the socialist way of life is free creative labour and the new socialist conditions in which men work. That is the starting point for an analysis of the socialist way of life and the diverse vital activity and behaviour of men and women. But that is not the whole point. An important feature of the socialist way of life is

the growing social activity of the masses of people, their broader ideological horizons, enrichment of their spiritual life and communion with a high culture. With the advance towards communism, there is bound to be a growth of spiritual requirements, and the task is actively and consciously to shape human requirements. That is one of the purposes of communist education.

The shaping of men's requirements as a key element of the socialist way of life helps to prepare the mode of life which should take shape in the transition to communism. This means above all work as the key vital requirement. Ahead we envisage man brimming with creative strength and capabilities and having all the conditions at his disposal to bring them out.

When Marx spoke about changing the forms of labour under communism, and when Lenin spoke about the allround development of the man of the future and about his capabilities for different types of activity, they did not mean, of course, that men would be doctors today, architects tomorrow, musicians after tomorrow, and so on. The new idea is that while contributing to society's overall effort by his labour in accordance with his capabilities and inclinations, for the purpose of creating and developing material and spiritual wealth, man will also be able to display his powers in various fields of activity, or self-activity, to be more precise.

In socialist society, we already have a broad section of workers, collective farmers and office workers who do their main jobs and also express themselves in various forms of creativity. Diverse socio-political activity, the rationalisers' and inventors' movement, creative initiative in scientific and technical societies and amateur art and drama groups are all forms of allround human development.

The new society carries on balanced direction of the processes in improving the socialist way of life and translates the plans of communist construction into reality.

Efficiency of Social Production

TIGRAN KHACHATUROV

The rising efficiency of social production is a general regularity of economic growth under socialism. It acquires especial importance today, when the possibility of using extensive factors in development are limited by full employment and by the fairly high level to which the working of natural resources has been carried. The task of the working people is, therefore, by relying on technological progress and their skills, to raise labour productivity, make broader use of intensive methods of economic activity, and to find the best proportions for allocating resources both between production and non-production sectors of the economy and within these sectors.

Accordingly, efficiency, which is a broader concept than intensification of production, and includes the socio-economic aspect of development, has a much greater role to play.

Under a planned socialised economy, greater efficiency depends above all on the proper organisation of economic management, the gist of the problem of enhancing efficiency consisting in the need to secure a substantial increase in the volume of production and national income per unit of labour, material and financial inputs.

In the early period, during the USSR's industrialisation and the first five-year plans, raising the efficiency of social production was seen mainly as achievement of high economic development rates. This approach has been and still is meaningful, but at that time there was still very limited application in planning and economic computations of the indicators of the gross social product and also of the national income.

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These indicators were more widely used in the postwar period, and this was reflected both in scientific writings and in economo-planning practice. In the 1950s, a theory of capital-investment efficiency was formulated in the USSR, according to which efficiency was measured through the ratio of national income to production assets, and national income increment to capital investments.

At every stage of social development, economic efficiency differs in terms of quality and quantity. As an economic category, it is determined by the basic economic law of each social formation. Efficiency expresses the quality of economic activity which is proper to the given formation, and its inherent relation between the inputs of social labour and the results obtained.

In the capitalist and the socialist systems of social production both the content and the indicators of efficiency are fundamentally distinct from each other in virtue of the distinctions between the private and the social property in the means of production, the private and social interests, and the private-economy and the people's economy approaches. But this does not rule out the possibility of making comparisons between efficiency of economic activity under different social systems. Thus, to bring out the advantages of socialism over capitalism it is legitimate to compare, on the basis of specially elaborated method principles, economic parameters of the opposite systems like rate in the growth of production, the relation between expenditures and the effect obtained, and various value and natural indicators. Two aspects, the theoretical (conceptual) and the computative, may be identified within the problem of international comparisons of efficiency. These aspects are linked with each other, but the role of the first is crucial. No concrete computations of efficiency can be regarded as being truly scientific, where for capitalism these are limited to a determination of the income-to-capital ratio or the profit-to-investment ratio, without any consideration either of the relations of exploitation, or the wasteful use of resources, and so on. Nor is efficiency under socialism a mere relation between inputs and results, for it reflects the socialist principles governing the satisfaction of requirements and the social achievements in the first phase of communism.

The purpose of socialist production is known to be the utmost elevation of the people's material and cultural standards, on the basis of utmost development of socialist production. This requires optimal disposal of all the resources of society and the most appropriate distribution and use of social-labour inputs. The results these inputs yield and the level of efficiency attained in social production will make it possible to judge the quality of economic management in the broad sense of the word, and show whether economic activity is correct and rational at every "tier". Accordingly, the effectiveness of social production is ultimately determined by the time and inputs it takes to secure the attainment of the goals.

At this point we approach the definition of the criterion of efficiency under socialism. It should evidently be considered in close connection with the socio-economic tasks of social development.

Under capitalism, the criterion of efficiency is the satisfaction of private-economic interests and the maximisation of profits. Under socialist ownership, this criterion is based on the interests of the national economy as a whole, on the interests of the whole of society. All that is effective which best promotes the earliest attainment of the tasks set before the economy. The fullest use of labour and material resources is required above all to ensure optimal rates of economic and social growth. This formula for the criterion of efficiency in social production under socialism has been known for some time, but it provides only a qualitative evaluation of efficiency and needs to be supplemented with quantitative indicators so as to make economic growth and the required inputs commensurate. Now several questions arise. Should these indicators be relative or absolute? At what point in time—in the present or in the future—should effect and inputs be compared? How are we to determine the factors which influence the level of efficiency?

Economic efficiency is a relative magnitude, being the ratio of the effect produced to the inputs required for obtaining it. This kind of comparison is a generally accepted method in the quantitative definition of efficiency in social production, and Lenin had it in mind when in a letter to G. M. Krzhizhanovsky he set out a possible method of computing the benefits and necessity of electrifying the country under the GOELRO Plan.

This approach envisages the attainment of the maximum effect under given inputs or a given effect under minimum inputs. It is also acceptable in selecting the optimal variant of an economic plan or project, and in evaluating economic measures realised in production, construction, circulation, and so on.

Let us take a closer look at the questions which arise in a comparison of effect and inputs—the numerator and the denominator—that is, the ratio which helps to measure efficiency.

The magnitudes being compared may be homogeneous, being expressed in terms of value (national income, fixed assets) or in physical terms (steel output in tons, number of workers employed in ferrous metallurgy). They can also be heterogeneous, being expressed both in terms of value and physical volume (gross product per worker). As a rule, the global national-economic and sectoral indicators of efficiency are both homogeneous and heterogeneous.

Furthermore, the indicators being compared may be absolute (the total volume of fixed assets, the national income) or incremental (the increment of assets, the product, stocks, capital investments).

Here, much importance attaches to the question of the time lag. The national income, the product, the increment of assets, capital investments are taken for the year, and the fixed assets and the number of employed are taken at a definite date or as an average for the year. There is need to consider the time lag between the inputs and the effect obtained. Its magnitude fluctuates depending on the character of the inputs and the effect, ranging from a few days in the

measurement of current inputs in connection, say, with the switch to a new type of material, to several years which it takes, say, to build a large project in industry or transport. When aggregated global computations are made on the national-economic level, the assumption is that there is a lag of one year, so that the national income for the current year is related to the fixed assets at the end of the previous year (but the lag must be longer for capital investments, considering that these have not yet come on stream).

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What then are the indicators that help most correctly to measure the efficiency of social production? First of all, these indicators should make for the national-economic approach in evaluating efficiency, whether the economy as a whole, its sectors or individual enterprises are involved. This kind of approach implies consideration not only of the direct but also of the indirect effect which arises on the basis of the inputs. Thus, in evaluating the efficiency of introducing more powerful units at electric-power stations one should take account not only of the reduced costs of electric-power generation, and the per unit capital investments, but also of the effect yielded by the much broader consumption of electric power in the national economy.

At one time (but not as often today), the view was expressed that the *gross social product*, or, to be more precise, its increment obtained as a result of definite inputs was the best indicator of the efficiency of social production. However, this is a highly controversial assertion. The fact is that more than half of the gross social product consists of transferred value. Besides, under the accepted mode of computation its magnitude includes repeated counts of raw and other materials, energy, and fuel at the subsequent stages of production right up to the appearance of the finished product.

Any increase in the inputs of raw and other materials and a mere increase in their prices tend directly to increase the volume of the gross social product. That is why when this indicator is used in computations there must be an especially thorough analysis of the initial data, to avoid any distortion or exaggeration of the actual rise in efficiency.

The indicator of the *final social product*, which is the sum-total (in value terms) of durable and non-durable consumer goods, and of the means of production which go beyond the limits of the annual process of production, and also of the foreign-trade balance, has no such shortcomings. For the national economy as a whole the final product exceeds the net product by the amount of depreciation.

As we have already said, when the theory of the efficiency of capital investments was being elaborated it was suggested that the *net product*, or the *national income* should be taken as the national-

economic effect, and this is an approach which is shared by almost everyone at the present time.

The national income is the value of the net product turned out in the course of a definite period, or the difference between the gross product and the value of the means of production consumed within that period. Its magnitude is proportional to the quantity of the living social labour expended in the process of production and expressed in terms of simple labour. In value terms, the national income does not reflect the growth in the physical volume of production, which is why it is necessary to determine it in comparable prices, and this makes it possible to take account of the growing productivity of social labour, and also of the increase in the material volume of production. In material terms (as the net product) it is equal to the sum-total of the consumer goods and means of labour (with the exception of those which have gone to make up for wear and tear) produced within the given period, plus or minus the difference between the stock of the products of labour at the beginning and at the end of the period, and plus or minus the difference between exports and imports.

Because the national income includes only the newly created value, leaving aside the inputs which have gone to create it, it is on the whole the best of the available indicators for the national economy on the basis of which one is able to judge the magnitude of the effect obtained in social production.

It is a different matter when the efficiency indicator is applied to the sectors and especially to the lower echelons. For the national economy as a whole we start from the assumption that the sum-total of prices is equal to the sum-total of values, which is why the total magnitude of the national income reflects the actual volume of production. That is not so for the sectors of the national economy—agriculture, transport—and especially for the individual industries. Here, in many instances there is a long-term, if not constant, deviation of prices from values, so that sectoral indicators may greatly over- or understate the actual volume of production.

The deviations are even greater for the individual enterprises, and here we have to resort to such substitute indicators as profit or gross output increment, computed in comparable prices or in a sum of inputs. We call these indicators substitute ones because they largely reflect not only the growth of production but also the changes in prices, the use of more costly raw materials, and so on.

The product-to-assets ratio (or the assets-to-product ratio, the inverse magnitude) is now frequently used as an indicator of efficiency. For the national economy as a whole, the product-to-assets ratio is computed as a ratio between the national income and the production assets: fixed or circulating, or only fixed.

From 1955 to 1975, the product-to-assets and the assets-to-product ratios for the national economy of the USSR changed as follows (computations are made on the basis of *Soviet Economy* yearbooks for corresponding years):

	1955	1960	1965	1970	1971	1972	1973	1974	1975
National income (actually effective prices; thous. mln rubles)	98.4	145.0	193.5	289.9	305.0	313.6	337.2	354.0	362.0
Fixed production assets on Jan. 1 of corresponding year (in 1955 prices; thous. mln rubles)	111	174	278	422	461	501	543	590	641*
Product-to-assets ratio (kopeks per ruble's worth of assets)	88.6	83.3	69.6	68.7	66.2	62.6	62.1	59.3	56.4
Assets-to-product ratio (kopeks per ruble's worth of national income	113	120	144	146	151	160	161	169	167

* in contemporary prices—741.

An incremental product-to-assets ratio is also frequently used in such computations. This is the ratio between the national income increment, or capital investments in production assets.

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Annual national income increment (thous. mln rubles)	13.9	18.1	18.6	17.8	28.0	15.1	8.6	23.6	16.8	8.0
Annual increment of fixed production assets on Jan. 1 of corresponding year (thous. mln rubles)	34	25	26	29	30	39	40	42	47	51
Incremental product-to-assets ratio (kopeks per ruble's worth of assets)	40.9	72.4	71.5	61.4	93.3	38.7	21.5	56.2	35.7	15.7
Incremental assets-to-product ratio (kopeks per ruble's worth of national income)	245	138	140	163	107	258	465	178	280	638

The table shows that the incremental magnitudes are much more variable and unstable than the basic magnitudes, whose dynamic characterises the overall tendency in development.

The dynamics of the product-to-assets and assets-to-product ratios, however, are inadequate for judging about the level of efficiency in social production. This means that a reduction in the product-to-assets ratio (or an increase in the assets-to-product ratio) is not yet an indication of a decline in the efficiency of production, for the latter may rise, for instance, as a result of a reduction in current inputs or the costs of production. In effect, the computation of the efficiency of capital investments largely boils down to the comparison of lump-sum inputs and costs of production. That is why in some conditions it is advisable to make additional inputs where the saving on current expenditures is recouped within the limits of normative periods.

Let me illustrate this by way of a concrete example. Fixed production assets in industry went up from 168 thousand million rubles on January 1, 1966, to 385 thousand million rubles on January 1, 1976 (in present-day prices). In that period, gross industrial output rose from 248 thousand million rubles to 511 thousand million rubles. Consequently, the assets-to-product ratio for the industrial product (that is, assets per ruble's worth of product) increased from 67.7 kopeks to 75.3 kopeks, or by 7.6 kopeks per ruble's worth of product. But in that period, there was an annual reduction of inputs per ruble's worth of marketable product in industry. From 1966 to 1975, the reduction came to around 7.8 kopeks. This comparison shows that the rise in the assets-to-product ratio over the past 10 years was compensated by a drop in the cost of production.

All of this shows that in order to judge about the efficiency of production there is need for indicators not only of the assets-to-product ratio (or of the product-to-assets ratio), but also for economies on current inputs.

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Consequently, the growth of social resources—production (in the form of an increment of fixed and circulating production assets) and consumer values (the mass of consumer goods produced)—is the global effect of social production.

To this magnitude of the increment in material resources need to be added the non-material values which are expressed in the growth of skills, knowledge, experience, culture, and health of people, and here, too, one should identify that which bears on workers in material production and has an influence on the growth of the latter.

This produces the difficulty of making a quantitative measurement of intellectual values. For lack of a better indicator, one objective indicator here in determining the effect of education could to some extent be provided by the inputs required for this purpose. But this would fail to take account of the inputs of labour for the acquisition of knowledge by those who obtain it and, what is most important, of the effect of the development of production thanks to the knowledge obtained by the workers and executives.

The improvement of the workers' skill in consequence of their acquisition of knowledge and experience has an effect on the growth

of labour productivity. A differentiated measurement of labour productivity by groups of workers helps to determine the effect obtained from education or training and experience. It is much more difficult to compute the effect of executives' higher standards in production, because the only data provided for conclusions here are to be found in special statistical studies, questionnaires, polls, and so on.

The effect of an improvement in the people's health may be evaluated from reports, like the decline in production losses because of a reduction in absenteeism for health reasons, that is, ultimately also according to the level of labour productivity. Concerning the other intellectual values, leisure time, etc., it is hardly possible to express these in quantitative terms, unless some artificial coefficients are applied.

Now, to attain an indicator of efficiency there is need to compare the magnitude of the effect computed with the aid of the above-mentioned methods, and the inputs required to achieve this. If the effect is taken as the numerator of the fraction, the inputs will be denominator.

* * *

Soviet economic writers frequently recommend the adoption of the gross social product as the indicator of inputs, meaning that it is a reflection of the whole amount of the inputs of past and living labour effected in the course of the year, and that this gives the ground for a comparison with it of the net product as the effect realised by means of these inputs. As a result, we obtain the following formula:

$$E=\frac{v+m}{c+v+m}$$

However, this equation cannot be regarded as an indicator of efficiency. It is the ratio of the annual national income to the gross social product, or the share of the net product within the gross product. In the past few years, this share for the national economy has been as follows:

	1960	1965	1970	1971	1972	1973	1974	1975
Gross social product (thous. mln rubles)	304	420	644	685	717	771	816.4	862.4
National income (thous. mln rubles)	145	194	290	305	314	337	354	363
Share of national income (per cent)	47.7	46.2	45.0	44.5	43.8	43.7	43.4	42.1

The table shows that the share of the national income in the social product has tended to decline. And that is quite natural. It is in general characteristic of the development of the productive forces for the

share of living labour within the sum-total inputs of labour to decline. "The increase in labour productivity consists precisely in that the share of living labour is reduced while that of past labour is increased, but in such a way that the total quantity of the labour incorporated in that commodity declines."[1] However, the law-governed reduction in the share of living labour within the product does not at all signify a decline in the efficiency of production, for this can and must rise.

A comparison of the net and the gross product for measuring efficiency is wrong for other reasons as well.

Indeed, the national income, which is the numerator, results from inputs not only in the given period, but also in the preceding periods. All the production assets, the results of accumulation over a long period of years, are of tremendous importance in producing the national income. Buildings, structures, equipment, roads, ports, all are immediately involved in the attainment of the given volume of production, the volume of the net product, and the magnitude of its increment.

Some say that these inputs of the means of labour have been taken account of in depreciation. But the latter is a reflection only of a part of the fixed production assets, only of that share of them which has been *consumed* in production and whose value has been transferred to the product. This share is, of course, much smaller than the fixed production assets which have been *applied*, which exist and which continue to exist, although their value has been reduced in consequence of wear and tear. Without them it would be impossible to carry on production. That is why it is necessary to take account of the labour inputs they contain. This full volume of fixed production assets is not included in the gross product (Marx's schemes of reproduction are based on the assumption that these assets circulate in the course of a year). No wonder then that in Volume II of his *Capital*, Marx draws a clear distinction between the constant capital that has been *consumed* and that has been *applied*. Let me add that the division of the annual product into c, v and m was done for purposes connected with the analysis of the role of constant and variable capital and also of the surplus-value in the process of reproduction, but not at all for comparing effect and inputs. But that is not the whole point. As we have already said, the indicator of the annual social product which our statisticians compute with the use of the plant method (as a sum-total of the gross product of individual enterprises) contains repeated counts. As a result, the denominator of the fraction is overstated and the whole fraction—understated.

Some authors have proposed that the denominator of the formula should consist of the magnitude of the gross inputs stripped of that part of the surplus-product which does not go into accumulation, that is, the inputs into education, public health, social security, services, management, defence, and so on. We think that this approach is essentially incorrect because virtually all these inputs are necessary for obtaining the national-economic effect, and while some of them may not have a direct effect on the growth of the volume of production, they do help to create definite conditions for the process.

* * *

Summing up what we have said, we suggest that for a correct determination of inputs (denominator of the fraction) which are necessary to obtain the effect (the net product, the national income), the following approach should be taken. First, the inputs should be counted once, if we are to obtain the actual instead of an overstated amount. Second, there is need to take account of all the material inputs into the production assets required for the normal functioning of production: fixed and circulating assets and payroll funds. Accordingly, the input amount should include the full inputs of the living labour of workers employed in material production. These can be expressed in man-hours of labour in terms of simple labour. When computing economic efficiency, these are best shown in value form. That part of them which has the form of wages and other primary incomes of workers in the material sphere may be taken as being v. To this should be added the magnitude m, that is, the whole amount of the accumulation consisting of profits, a part of the turnover-tax and other taxes, and so on. In this way, the whole magnitude of living labour inputs into the production of the product is taken account of in terms of value. For a computation according to elements, the average ratio of $\frac{m}{v}$ is determined for the national economy (in 1972, according to the USSR Central Statistical Board, this was around unity), and in accordance with this the computed magnitude v is increased for the purpose of obtaining the full inputs of living labour $(v+m)$ at every stage of the manufacture of a product. To these are related the inputs of living labour for the manufacture of the initial products: the extraction of raw materials, fuel, the generation of electric power, for the production of the intermediate product, like components, parts and other semi-finished products going into further manufacture, and, finally, for the manufacture of the final product, the articles of consumption and the means of labour designed for use in production. With this kind of approach, this mass of living labour inputs into material production does not contain any double count.

Further, account should be taken of the value of the wear and tear of the fixed assets, by taking the sum-total of the inputs into depreciation in the manufacture of the initial, intermediate and finished products. Here again, there is no room for any double count either. One should merely take into account that these inputs are somewhat understated in consequence of the excessively long normative span of service in some cases.

It now remains to calculate the inputs which could turn out to be left unaccounted for in the given year. This is necessary whenever, for instance, raw and other materials and other means of production used in the production of a given year had been extracted and turned out in the previous year but had been left in reserve. Their value should be added to the given year's inputs. Conversely, from these should be excluded the means of production left in reserve for future years.

What has been said shows, we believe, that this kind of clearing of the given year's gross inputs from repeated (and multiple) counts yields a magnitude which corresponds to the value of the final product: net product (national income) plus depreciation: $v+m+a$. In that case, the ratio of effect to inputs (or efficiency) is equal to $\frac{v+m}{v+m+a}$ or a magnitude which is much smaller than unity (roughly about 0.9) if the numerator and denominator are expressed in the same prices. It is even smaller if the numerator is computed in comparable and denominator in current, effective prices. There is also need to take account of the time lag between the inputs and the effect obtained, that is, to relate the given year's net product to the inputs of at least the previous year.

However, real inputs, as we have already said, are not confined to the sum-total of the inputs of living labour and depreciation: a condition for the growth of production is provided by all the production assets, without which the national income—whether in value or physical terms—could not be produced at all. That is why one should relate the effect obtained not only to current inputs, but also the inputs into the effective assets produced over the preceding period. But these cannot be simply summed up with current inputs, because they are not commensurate. The lump-sum inputs should be expressed, in advance, in annual terms. This can be done by computing the percentage of the fixed and circulating production assets in operation in accordance with the adopted standard of efficiency (0.12).

To the production fixed and circulating assets should also be added the inputs into the formation of the payroll fund for the workers in material production, bearing in mind that payment for man-power has to be advanced up to the end of the full cycle of the circuit, after which it can be made out of the returns from the sale or the whole product. If this fund is taken as R, the whole magnitude of the advanced funds necessary for the starting of production will be equal to $F=F_{\text{fixed}}+F_{\text{circulating}}+R$. After this magnitude is expressed in annual terms, we obtain the following: $E\ (F_{\text{fixed}}+F_{\text{circulating}}+R)$ or EF.

That is the amount one would have to pay annually into the bank (over and above the current inputs and profits) if the funds required to start an enterprise were borrowed from the bank at 12 per cent per annum (the standard efficiency).

In that case, the efficiency of social production as the ratio of effect to inputs could be expressed as $\frac{v+m}{v+m+a+EF}$ or $\frac{D}{P+EF}$, where D is the national income and P the final product.

One should seek to attain the maximum value for $\frac{D}{P+EF}$. At this point, a very important question arises: what is the period in which this maximum should be achieved? On the answer to this question depends both the magnitude of the required inputs and their structure. This problem was studied by A. Notkin, who showed that the inputs turned out to be quite different if the aim is to achieve the possible

maximum, say, within each immediate year ahead, or towards the end of a fairly long period of, say, 15-20 years, or, finally, as a sum-total for the whole period. In all these cases, the volume of capital investments and current economies turn out to be different. The calculations show that the least inputs are required for the achievement of the maximum effect towards the end of a long period, and the greatest, for obtaining the maximum effect in each given year. But it is also highly important to know how the consumption fund will look in all these variants. It should be the smallest under the second variant, and less intense in the magnitude of inputs, and the largest, under the first variant.

The ratio of the consumption fund in the national income to the accumulation fund is an important indicator of the efficiency of social production. The greater the volume of consumption per unit of accumulation, the more efficient the functioning of social production. When comparing these magnitudes there is good reason to add to the volume of consumption the non-production accumulation, the bulk of which consists of investments in dwelling houses, educational, public health, scientific, artistic and cultural establishments, that is, virtually investments in social consumption.

	1960	1965	1970	1972	1974	1975
Increment of fixed production assets in a year (thous. mln.rubles)	15.7	17.5	32.1	34.7	39.9	38.8
The same as a percentage of used national income	11.0	9.2	11.3	11.1	11.5	10.7
Increment of fixed production assets and material circulating resources and reserves (thous. mln. rubles)	28.7	39.8	65.2	64.8	75.5	73.4
The same as a percentage of used national income	20.1	20.9	22.9	20.8	21.6	20.3
Used national income in rubles per ruble of accumulation	3.73	3.79	3.39	3.64	3.55	3.78
Used national income in rubles per ruble of production accumulation	4.98	4.79	4.38	4.79	4.61	4.94
Consumption in rubles per ruble of accumulation	2.73	2.79	2.39	2.64	2.55	2.78
Consumption plus increment of non-production assets in rubles per ruble of production accumulation	3.98	3.79	3.38	3.79	3.62	3.94

On the whole, the figures in this table show that in the recent period the relation between consumption and accumulation was stable. From 1970 to 1975, the share of production accumulation has, on the whole, been stable.

Together with the above-mentioned indicators of economic efficiency, some recommend the use of increment indicators: the ratio of national income increment to production assets increment or consumption increment to accumulation increment, suggesting that these indicators could more clearly respond to the individual specifics of the dynamic from year to year. However, one should use these with restraint. As we have already shown, they have a much greater amplitude of fluctuation in time than total indicators, and require especially thorough and profound analysis, particularly in establishing the lag between national-income increment and the inputs which have brought this increment about.

In conclusion, let me emphasise the importance of analysing the factors which determine the dynamic of social production, the most important among these being labour and production assets, both fixed and circulating. The latter do not in any sense operate on their own, as the non-Marxist "three-factor theory" would have it. Everyone knows that production assets do not of themselves produce any value but are the result of inputs of past labour and equip workers with the means of production, helping to boost labour productivity and so to increase the output of the product. The quantitative relation between the inputs of labour and the means of production can be characterised by means of the following equation:

$P=AL^{a}K^{1-a}$, where P is the product, L—labour, K—production assets, and A and a—the parameters of the function.

This expression was proposed in its simplest form by Cobb and Douglas, and was subsequently improved by various economists, including the Soviet economists Anchishkin, Vishnev, Pochkin, Shtern and others, who proposed that factors like the skills of workers and the technical level of production should also be taken account of in the form of special coefficients. To this one could add the system of production management, natural resources, and possibly some other factors which could influence the volume of production. Their analysis is highly important in studying the efficiency of social production. After all, it is not only a matter of comparing figures and showing their movement, but also of discovering how the various conditions, which do or do not depend on men, tend to influence the development of production. Factors like the growth of cultural and educational standards among men and women, scientific and technological progress, a country's endowment with natural resources and their accessibility, all have a very important role to play in the development of production and in the efficiency of social-labour inputs aimed to attain the goals set by society.

NOTES

[1] Karl Marx, *Capital*, Vol. III, Moscow, 1971, pp. 260-261.

New Trends in World Economic Relations Under Capitalism

RUBEN ANDREASYAN,
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The energy crisis has produced new forms of relations between the developed capitalist and the developing countries, generating additional impulses for advancing the processes, already emerged in this sphere of international economic relations.

The crisis which hits the system of the provision of primary energy resources for the world capitalist economy most glaringly reveals that it has no mechanism for a redistribution of resources among the developing and developed countries in accordance with the present level of the internationalisation of production and capital and the degree of political independence and maturity of young states. At the present stage of the anti-imperialist struggle carried on by the oil-exporting and other Third World countries, and with the exceptionally high dependence of Western Europe and Japan on oil imports, the traditional foundation of neocolonialist external economic conceptions tends to be eroded.

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First, the idea that the Third World countries can go on developing entirely under the direction of the key centres of world capitalism has turned out to be untenable. As these countries build up their economic and social potential and extend their multilateral ties with the socialist countries and production contacts with the industrial centres of the world capitalist economy, they also increase their "anti-imperialist potential".

Second, the aggravation of the problem of supply of the industrial countries with energy and other raw materials has markedly complicated the task of coordinating the interests of the imperialist countries and the interests of the monopolies. A visual example of this is the strategy and tactics of the giant international oil corporations.

Third, the energy crisis has sharply aggravated the relations among the chief centres of world capitalism, confronting its forces with a number of complicated problems and deepening the "uneven dependence" of the various units of the world capitalist economy on the sources of primary energy and other raw materials. The growing inter-imperialist contradictions and rivalry as the energy crisis advances, above all the separatist acts by Western Europe and Japan in relations with the raw-material countries have made it more difficult to pursue a common neocolonialist strategy aimed to set up a "single" international system for promoting the economic growth of the Third World countries. Such a system could, in practice, be nothing but collective neocolonialism under US sponsorship. The crisis of US leadership has introduced a new element into the expansion of world capitalism and has broadened the prospects for the developing countries' struggle for economic independence, without in any way reducing the expansionist efforts of each of the imperialist countries. It is highly indicative that the basic principle of a common approach to relations between the West and the oil-exporting countries, which the USA has sought to impose on its partners, also includes the establishment of an organised oil consumers' alliance, in which the United States would undoubtedly have the leading role to play in view of the much more advantageous positions of the United States on the world oil market.

For their part, the countries exporting energy resources have sought to use the situation to build up their own national economy and to enhance their economic independence. Quite naturally, the various countries in this group have had their own specific urge in this area.

Acute problems have emerged with the sharp increase in the government revenues of the energy-resources exporting countries. A new ganglion of contradictions has sprung up between the developed and the developing countries, and a new factor which tends to have an influence on various aspects of relations among them, and also within the Third World. In 1973, 11 oil-extracting countries had a total of $23 thousand million in oil revenues, and in 1974—$100 thousand million. The bulk of this has not been used productively, and has gone into US and West European banks. By the end of 1973, these countries' accumulated foreign assets reached $22 thousand million, and by the end of 1974—$65 thousand million.[1]

Consequently, the oil-exporting countries are in possession of financial resources which enable them to present a growing demand on the world market of investment goods and to act as major exporters of capital both to the developed and the developing countries. For some of these, the export of capital has even become something of a necessity. Thus, the United Arab Emirates, Kuwait and Abu Dhabi, and Saudi Arabia to some extent, have a very narrow internal base for consuming their export revenues, and this has turned them into banker-countries.

For their part, the oil-importing countries want to attract the petrodollars to finance their balance-of-payments deficits, to cover some investments, especially in the raw-material industries, and to stabilise the world monetary market.

While extending their economic contacts with the developing countries, the industrialised capitalist countries seek to fortify their positions in the Middle East, in North Africa and various other parts of the Third World and to set up new strongpoints for their expansion. There is a growing tendency to conclude agreements on a governmental level for deliveries to the developing countries of equipment and the provision of technical services in building national industrial enterprises, including building operations to be paid for with deliveries of oil or partially oil products.

In principle, such agreements are characteristic of all the oil-exporting countries. Thus, the government of Iran has concluded an agreement with France under which the latter is to build five atomic electric-power stations in Iran, take part in developing Iran's petrochemistry, build gas liquefaction plants and railways, prospect for oil in Iran and together with it in other countries. Such agreements have also been concluded with Italy and the FRG.[2] In addition, France is to help market Iranian gas in the West European countries.[3] This line of cooperation is highly important not only for Iran, but also for the other raw-material countries, because they all face the vital task of winning independent positions on the world raw-material commodity markets and getting rid of the monopolies' middleman activity in this area.

Iraq, which has set up a strong state oil sector, has been successfully developing mutually advantageous ties with foreign countries. It now seeks to extend its positions on the world oil market, and to have a broader range of clients, including Spain and Japan.

The latter's activity in the Arab East and in other oil-extracting countries, which was especially stepped up in the autumn of 1973, is highly characteristic of the capitalist countries which seek to secure oil supplies without the services of the US monopolies.

Japan, which depends on oil imports more than any other industrialised country, swiftly responded to the situation which took shape at the end of 1973. A succession of mutual visits and talks with Arab statesmen resulted in a number of agreements on cooperation, Japanese commitments on credits, and agreements on the delivery of Japanese manufactured goods to the Arab countries. At the same time, this was in line with Japan's overall external economic policy

aimed at the utmost expansion of marketing outlets for Japanese manufactured goods in the Third World countries through active penetration into the economy of these countries. Realisation of this idea became all the more insistent, because after the oil-price rise Japan faced considerable balance-of-payments difficulties. Characteristically, this line of stepping up Japanese capital operations in the Middle East, which became so obvious in the light of the growing complexity of the energy situation in the capitalist world after October 1973, had in fact been worked out very much earlier. Thus, the foreign investment forecast in 1972 suggested that from 1973 to 1980 Japanese investments in the Middle East would increase 10.7-fold, from $606 million to $6,500 million, while total investments would multiply 6.3-fold, from $6,800 million to $42,800 million.[4]

Japan seeks to secure access not only to oil but also to other industrial raw materials available in the Middle East, notably non-ferrous and precious metals.

A number of agreements on credits or direct participation in building and running industrial enterprises has secured for Japan deliveries of primary energy resources from the oil- and gas-extracting countries in other parts of the Third World.

A new aspect is that the Third World countries which are suppliers of primary energy resources have succeeded in getting the principle of long-term promotion of their economic development included within the system of their relations with the industrial capitalist countries. It is indicative that the problems arising from the use of oil exports to accelerate the development of the OPEC countries are now central to the activity of this organisation.

Various Western countries and their economic alliances, the European Economic Community in the first place, have been forced to consider the question of the economic development of the raw-material exporting countries. Thus, an EEC report of January 1974 said that the transfer of some production facilities from the EEC to the Middle East countries could be a way to invigorate economic cooperation among them.[5] In the spring of that year, the EEC Foreign Ministers' Council decided to start formal contacts with 20 oil-extracting countries in the Middle East to study the possibility of arranging economic cooperation between the two groups of countries in the field of energy and technology.

In working out "joint action" programmes within the EEC framework, the West European countries seek to solve a number of economo-political problems which are highly important for them:

to arrange a direct dialogue between Western Europe and the Arab oil-extracting countries. This question has been repeatedly considered by EEC agencies, and during contacts between West European and Arab statesmen;

to siphon off from the oil-extracting countries sizable financial resources accruing to them from the export of oil. Evidence of this will be found, in particular, in the above-mentioned EEC report;

to secure stable oil deliveries at "reasonable" prices, that is, to fix definite prices in cooperation agreements.

For their part, the oil- and gas-exporting countries, continuing their policy of concluding agreements with the Western countries on assistance in economic development, have sought:

to establish a firm connection between prices for raw materials and manufactures delivered under production or purely commercial agreements. This kind of price stabilisation would considerably facilitate their task of putting through development plans;

to use these agreements to develop national petrochemistry;

to secure a stable market not only for their oil, but also for their oil products, and subsequently also for petrochemical products;

to develop, alongside oil extraction, other types of energy-resources production in their countries, so as to make ever greater use of oil as a raw material for the chemical industry.

Practice shows that the Western countries and their entrepreneurs are attracted not only by the prospect of obtaining oil in the developing oil-exporting countries. There is also the urge on the part of monopoly capital to make use for its own interests of the industrial construction which is being carried on in most oil-exporting countries and their sizable financial resources. There are the characteristic circumstances of the development of Iran's automobile industry, which has been sharply accelerated under the impact of the energy crisis. General Motors has taken account of the relatively faster growth of demand for motor cars on the Iranian market and the availability of cheap petrol, with the result that it has switched to Iran surplus production from its subsidiaries in the FRG, with an eye to the possibility of exporting motor cars to the markets of other countries in the area.

The energy crisis has facilitated to some extent the search for oil and gas and the development of the oil industry in various Third World countries which were not regarded as oil exporters until 1973. Thus, prospecting is being carried on in India, the Arab Republic of Egypt, some countries of Africa, Latin America and Southeast Asia. Extensive interstate measures are also an indication of this tendency. Thus, in February 1974, the first African oil conference held under the auspices of the UN Economic Commission for Africa met in Tripoli to discuss a wide range of questions bearing on the state of the oil-extracting industry on the continent, the prospects and forms of its development, legislation in this field, the availability of manpower and specialists, and the ascertainment and study of reserves. In late 1973, 22 Latin American countries set up their Latin American Energy Organisation, whose main purpose is to conduct a common policy of control over the foreign companies' geological exploration on the continent, and elaborate a common system for setting oil prices.

The energy crisis, having aggravated relations between the developed and the developing parts of the world capitalist economy, also impelled world capitalism to exert a more active and diverse influence on the economic and social development of the young states in Asia, Africa and Latin America.

This tendency has been developing in contradictory conditions. Thus, the worsening of the balance-of-payments position of some

West European countries and Japan as a result of the sharp increase in the cost of imports of energy resources should have impelled these countries to reduce their outlays on "aid" to the developing countries. But on the growth of such aid depends the expansion of exports to the developing countries, which is a way of improving the balance of payments of the developed capitalist countries.

Thus, in April 1974, the United States resumed its "aid" to India,which it had suspended in December 1971, over the Indo-Pakistani armed conflict, definitely with an eye to the impact of Middle East developments. An international consortium for aid to India enlarged the volume of its credits for 1974/1975 and to some extent made its terms "easier". Holland decided to increase its aid to India, Pakistan and Bangladesh by 20 per cent. Japan's government aid to the developing countries in 1974 went up by 69 per cent,[6] and the FRG's—by 10 per cent.[7]

While carrying on their economic expansion in the Third World countries, the developed capitalist states have also made use of the financial resources accumulated by the oil exporters. Thus, three French banks gave Sudan a $200 million loan, which was underwritten by Saudi Arabia for a period of 10 years at two per cent per annum, for building industrial projects, including an oil refinery.

The use of the developing countries' foreign-exchange resources by the developed capitalist countries is not a fundamentally new phenomenon and has been included among the instruments of the neocolonialist methods of expansion. The US Administration, for instance, has advised US businessmen in Latin America to rely on local sources of finance, while repatriating their profits to the United States. The West is now seeking to use the need, which has objectively arisen at the present stage of development in some Third World areas, to set up their own money markets and credit-and-monetary establishments. The French journal *Eurépargne* said: "It is paradoxical that countries like Syria, Jordan, Egypt, Sudan and Yemen are acutely in need of capital to meet the requirements of their economic development, while other Arab countries have it in great excess and seek to invest it abroad, from where the capital ultimately often goes back to the Middle East.... This kind of picture was characteristic of financial relations between the European countries and the United States until 1963.... The specific relations between Arab countries in the monetary sphere depend on economic, political and institutional factors.... The problem is that their economy in general and their monetary systems in particular are more effectively connected with the outside world than with each other."[8]

The imperialist countries expected to see the organisation of a network of credit and financial establishments with their participation in the Middle East and North Africa to create even more favourable conditions for their penetration into the economy of the area, to help them use petrodollars for the same purposes, and painlessly to funnel to these institutions some of the petrodollars accumulating as liquidity in the United States and Western Europe.

The developed capitalist countries seek to use these new forms of contacts for involving the developing countries ever more "organically" in the system of the world capitalist economy as a more active but still dependent element. In this context, some agreements can in practice help to extend the economic positions of this or that Western power in a given oil-extracting country. Indeed, new forms of dependence of oil-exporting countries may appear, once they are directly involved in enterprise in the developed capitalist countries, both in the purely financial and production fields.

The actual result of this kind of contacts depends above all on the character of the regime in the given developing country, and on the social forces which are in a position to use the new economic conditions in their own interests, and ultimately on the socio-economic development orientation that has crystallised there.

At the same time, direct participation by the oil-exporting countries in the economic activity of Western countries through various financial institutions, the purchase of government bonds in these countries, direct investments in real estate and company stock are not only a new sphere of relations between the two groups of countries, but also a new front of struggle for the developing countries' economic independence. Additional impulses in this struggle come from the international detente and the growing economic cooperation between East and West.

Quite naturally, the energy crisis has exerted a different influence on various groups of developing countries. The OPEC countries have obtained considerable material advantages from the higher oil prices. Another group includes countries which either have enough oil extraction at home to be self-sufficient (Bolivia, Colombia, Mexico, Tunisia) or which can cover the additional outlays on oil imports from the growing revenues of their traditional exports (Zair, Brazil, Zambia and Malaysia). The third group consists of developing countries that are unable to meet the high outlays on oil imports through larger export revenues, and so face a sharp aggravation of their economic difficulties.

The rise in oil prices from 1972 to 1974 resulted in an increase in the cost of imports for the whole group of developing countries importing liquid fuel, from $2,200 million to a total of $12,200 million. At the same time, under the impact of inflation and the higher prices for oil and oil products, there was a rise in the prices for fertilisers and cereals, and this in view of the Third World's import needs required additional outlays of another $5 thousand million. Indeed, the outlays on the import of cereals and fertilisers were absolutely necessary for many developing countries, which were hit by heavy crop failures in 1972 and 1974. Thus, an estimate contained in the EEC report presented in the 6th Special UN General Assembly says that the Third World's outlays on the imports of oil, food and fertilisers mainly in the third group of countries came to $15 thousand million in 1974, or 30 per cent of the total value of the exports of the whole group of developing countries in 1972.

Imperialist circles seeking to split the national liberation movement and to isolate the OPEC countries, to put pressure on them, to induce them to reduce oil prices and to hit the whole anti-imperialist movement have been trying to capitalise on the difficulties facing the developing countries which have to import oil. Replying to the charges of the Western powers, the oil-exporting countries justly noted at various international forums, including an ECAFE session, and the 6th Special UN General Assembly in the spring of 1974, that the whole Third World had suffered from the spread between the prices of raw materials and the manufactured goods before the increase in the oil prices, while the growing consumption of cheap oil in the developed countries merely served to enlarge the gap between them and the developing countries.

The developing countries which depend on imports of liquid fuel, took the right approach to the oil price rise and requested the oil-exporting countries to make available easy credits for oil imports, for every possible reduction of oil prices for them, and loans to develop various sectors of their national economy.

The first conference on economic cooperation between the African and Arab countries was held in Cairo in January 1974 by the Arab League and the Organisation of African Unity, and there spokesmen for the Arab countries committed themselves to meeting the African countries' requirements in liquid fuel.

On the initiative of the Arab side, it was also decided to accelerate the establishment of a special Arab Bank for Africa's economic development with an initial capital of $195 million, and also an Organisation of Arab Petroleum Exporting Countries' Fund for Africa's development amounting to $200 million. It was announced that the African countries could obtain loans on easy terms at only one per cent per annum, which is some 7-8 per cent below the going interest rate.

The members of the OPEC also set up a special fund to make available interest-free loans for 20 years for Arab countries hit by the higher oil prices, including Mauretania, the Yemen Arab Republic, the People's Democratic Republic of Yemen, Somalia, Sudan, Morocco, Lebanon and Jordan. By the end of 1974, there were roughly 20 such banks and funds, and that year nearly $14 thousand million worth of loans were received by the developing countries from the OPEC members. Some of them have also attracted direct capital investments in their economy from the oil-rich states.

The economic assistance from the oil-rich states to the rest of the Third World could become a major source of external financing of the latter's economic development, and so demonstrate fresh potentialities in the developing countries' mutual assistance. This new phenomenon is latent with great potentialities for the developing countries' struggle for their economic independence, because it could narrow down the area of imperialist "aid", thereby reducing the developing countries' dependence on the industrialised capitalist states. At the same time, the oil-importers among the developing

countries now frequently find themselves in debt to conservative regimes which are in power in some of the donor countries, and which could have a stake in holding back progressive socio-economic transformations.

* * *

The energy crisis has intensified the tendency for the movement into the developing countries—frequently in form of jointly owned enterprises—of some basic industries from the developed countries with a high labour-intensiveness and a high demand for raw materials and energy, and this has resulted in an increase in the covert import of energy. The developed countries have been importing a large proportion of the raw materials in the form of semi-finished products, or concentrated ore, which means importing the energy that has gone into the extraction and primary processing of these materials in the exporting countries. Let us note that these inputs are very considerable: it takes 26 kwh of electric power to produce one kilogramme of copper, and 70-75 kwh to produce one kilogramme of aluminium. In this way, the foreign monopolies seek to cut their costs of production in some sections of their manufacture, while maintaining their control over production and also securing leading positions on the markets of the countries where such enterprises are being set up.

The "equal partnership" in development, which the ideologists of neocolonialism claim this movement has been producing, has done nothing to eliminate, but has in fact gone to spread the technical gap between the developed and the lagging areas of the world capitalist economy. The location of technically advanced and science-intensive industries in the developed part of the capitalist world, and of the basic raw-material and labour-intensive industries in the backward part results in a kind of "sectoral confrontation" between them. Foreign capital in the form of international monopolies operating in the developing countries seeks to establish positions in every sector of their national economy. The international monopolies which maintain their neocolonialist system of the international division of labour are the chief instruments of the exploitation of the developing countries, while also being the main obstacle in the way of their genuine socio-economic progress.

The "equal partnership" has not rid neocolonialism of its sharpening contradictions, which is why it is fraught with serious collisions, upheavals and explosions. The incipient evolution of relations between the oil-exporting and the developed capitalist countries, the growing use of new forms of direct participation by Western governments and monopolies in the developing countries' economy has not at all ruled out the steady growth of contradictions between the two groups of countries, or between the forces of neocolonialism on the state and the monopoly level. The functioning

of the whole system of neocolonialism very largely depends on the concerting of the interests of the international monopolies operating in the Third World and the state economic interests of the leading imperialist powers. However, there, too, conflict situations latent with crisis phenomena for neocolonialism as a whole likewise tend to emerge.

At the same time, the new situation opens up definite opportunities for the developing countries which export oil and other raw materials in pursuing more extensive initiatives in their domestic and external economic policies. The possibilities of using the oil potential are not limited to the concrete economic advantages already secured in 1973 and 1974. These successes pave the way for a further offensive along a broad front of struggle for economic independence.

First, with the general extension of the socio-economic basis in many developing countries, these successes have provided fresh impulses to the nationalisation of foreign property and its displacement by national, chiefly state property. The energy crisis has invigorated the search for oil and gas under the control of national states. Some oil-exporting countries have extended this to the working of other mineral raw materials, and this has resulted in the emergence of various new forms of agreements between these countries' government organisations and foreign companies on the joint exploration, development and working of natural resources.

Second, in the fight against the domination of the foreign monopolies, the developing countries have tackled the task of exercising full sovereignty over their natural resources, which implies the right to dispose of these resources, that is, the right to decide on how these are to be used.

Third, virtually for the first time in the history of the struggle against imperialism, the developing countries have demonstrated the effectiveness of pooling their efforts, of their unity, which the industrial capitalist countries cannot confront with collective neocolonialism, being forced to act separately and to seek to renovate the forms of their cooperation with these countries.

Fourth, it has become even more obvious that the conjunction of economic and political demands in the anti-imperialist struggle helps to secure considerable successes, and that this tends especially to sharpen the inter-imperialist contradictions. In general, the energy crisis has added new features to the inter-imperialist contradictions, and this has been duly used by the developing countries. The nature of the measures which the oil-importing capitalist countries have been forced to take in this crisis situation—direct contacts with the oil-extracting countries, bypassing the middle-man services of the international monopolies, and alliance with other importers, diversification of import sources and the use of new forms of cooperation—have all considerably extended the prospects in the further struggle by the developing countries for their economic independence.

The immediate results of this struggle and the new elements in the positions taken up by the contending parties, brought out in the light

of the energy crisis, largely determine the current stage of the Third World's anti-imperialist struggle as a whole. At the same time, they have generated new tendencies in the world economic ties of present-day capitalism.

A striking example of this is offered by the general changes taking place on the raw-material commodity markets, which have been given an additional impetus by the energy crisis.

The raw-material crisis of the world capitalist economy has not, of course, sprung exclusively from the energy upheavals of the past few years. It is fundamentally due to the long-established and typically colonialist policy of "cheap raw materials" which the imperialist monopolies have pursued.

The cheap raw-materials policy was foisted by the developed capitalist countries on the Third World and was maintained even after the collapse of the colonial system, because it rested on a number of factors. The newly independent states were acutely in need of resources for their economic development and material back-up of their social transformations. Such resources were available only on the external market, and this called for an increase in exports. However, in most developing countries, the export industries were subordinate to monopoly capital, which continued to operate on the basis of the old treaties and concession agreements concluded for long periods. The new type of agreements ("partnership" and "contracting" in the oil-producing countries) taking more account of the interests of these countries were secured only in long and heavy struggle.

The imperialist, mostly multinational monopolies continued to have control of these resources, and to handle over 40 per cent of the developing countries' raw-material exports. Attempts at any radical solution of the problem in this or that country through nationalisation of the property of the monopolies were fraught with a real threat to the existence of their political regimes. In defending the interests of its monopolies, imperialism frequently resorted to armed intervention (the tripartite aggression in Egypt in 1956), extensively resorted to subversive operations, made use of domestic reactionaries in the Third World countries (the events in Chile, the Dominican Republic, Brazil, and so on).

The intensive working of the Third World's raw-material resources by the international monopolies over a long period led, on the one hand, to the satisfaction of the world demand for raw materials, and on the other, slowed down the development of the raw-material industries in many of the consumer countries. Through the raw-material exploitation of the Third World, the developed capitalist countries were enabled to step up their investments in the manufacture of finished products and to build up an industrial structure in their economy.

However, as a result of the rise to political independence of the former colonies, a process intensified and accelerated by the multifaceted influence of world socialism, the situation began to

undergo a radical change. The neocolonialist cheap raw-material policy found itself in an impasse and had no prospects before it. This led to the development of the objective tendency "aligning" the raw-material industries in the world capitalist economy with the manufacturing industries, and this entails a growing share of investments going into the raw-material complex.

The view has been expressed in some Western countries that the change in raw-material commodity prices is basically short-term and that there could be a return to the former level (even if not quite fully). We feel that only the very highest points of the new prices for raw materials could be regarded as being the "short-term" part. The very tendency for raw materials to become more costly is irreversible and this will be seen from the fact that the policy in the production, price-formation and geographical distribution of exports has already completely escaped from the once total control by the raw-material monopolies, and is now passing into the hands of the raw-material exporting countries.

This was demonstrated, in particular, by the 6th Special UN General Assembly held in April 1974. Spokesmen for the developing countries, regardless of political system, insisted on the establishment of just and equitable international economic relations.

These demands were supported by the Soviet Union and other socialist-community countries, who also urged that the interests of all the groups of exporting and importing countries should be taken into account. For all practical purposes, a united front of developing and socialist countries took shape at the session, and through their joint efforts they secured the adoption of a number of important documents criticising the policy of neocolonialism and urging the need for full and equitable participation by the developing countries in the solution of all international problems. These documents proclaimed the determination of the United Nations to promote the establishment of a new international economic order eliminating the inequality, putting an end to the injustice, and establishing the principles of complete and inalienable sovereignty of each state over its natural resources and the whole of its economic activity. Among the totally new elements to be found in any General Assembly document is the demand for the establishment of supervision over the operations of the international corporations and their regulation, so as to prevent them from meddling in the domestic affairs of the developing countries, and also to set up producer associations to help the developing countries to maximise their export earnings.

* * *

Consequently, the energy crisis, by sharply aggravating the problem of energy and other raw-material supplies for the industrial capitalist countries, has accelerated the growth of crisis phenomena within the world capitalist economy. Weak spots have appeared in the

framework of neocolonialist dependence, which could be broken through by some groups of developing countries possessing this or that set of advantages. Neocolonialism, with its monopoly system of raw-material supplies, has turned out to be at odds with the present level of the world productive forces and the new structure of economic ties within the world capitalist economy and within the economy of the whole world under the economic competition and the economic interaction between the capitalist and the socialist states. At the same time, the achievement of sovereignty by all developing countries over their natural resources and the protection of their economic interests has become considerably more realistic. All these circumstances predetermine the new lines and the new level of struggle by the developing countries for their economic independence.

Additional prospects are being opened up in this struggle with the aggravation of the contradictions of capitalism on a world scale, and with the need for the leading industrialised countries to help the further development of the periphery for the purpose of using the advantages of the international division of labour. The growing economic ties between the "industrial" and the "peripheral" parts of the world capitalist economy make it easier for the developing countries to realise their demands for a fundamental change of their status within the system. As a result, it is now even more obvious that the developing countries' efforts to consolidate their state sovereignty and to achieve economic independence are interdependent, because these two lines of struggle fuel each other.

The existence of countries in the Third World taking the socialist orientation has invested the movement for economic independence with considerable additional momentum, because their demands are more consistent and their ties with the socialist system broader and more varied. Thus, the stand taken by Iraq and Algeria on the oil issue during the energy crisis largely helped to invigorate the oil-exporting countries' common struggle.

At the same time, the successes scored in the common struggle for economic independence have not predetermined the choice of further ways of socio-economic development by the Third World countries. What is more, their new positions in the world capitalist economy could be used by the industrialised capitalist countries to promote their own interests, despite the fact that the events arising from the energy crisis have made it quite clear that the developing countries have an ever more active role to play in that economy.

A characteristic feature of relations within the world capitalist economy is that alongside the growing gap in the economic, scientific and technical development levels, in the levels of the overall economic potential between the group of relatively backward and the group of industrialised countries, the overall balance of strength tends to change against the latter. The developing countries, being simultaneously components of the world capitalist economy and of the worldwide economy, have been active allies of the socialist

countries in the struggle to shape a new system of international economic relations based on equality and mutual advantage for all those involved.

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The present article is an abridged version of a chapter from the monograph, The Energy Crisis in the Capitalist World, *which is reviewed by B. Rachkov in this issue.*

NOTES

[1] See *Financial Times*, January 17-18, 1974; *New York Times Magazine*, September 15, 1974.
[2] See *Petroleum Economist*, March 1974.
[3] See *Wall Street Journal*, January 28, 1974; *Middle East Economic Digest*, 1974, Vol. 18, No. 24.
[4] See *Far Eastern Economic Review*, March 18, 1974.
[5] See *Europe*, January 28 and February 4, 1974.
[6] See *Bulletin of Foreign Commercial Information*, January 21, 1975 (in Russian).
[7] See *Industries et travaux outre-mer*, 1974, No. 246, p. 22.
[8] Quoted from: *Problèmes économiques*, February 20, 1974.

The Agrarian and Raw-Material Basis of Capitalist Economy

VIKTOR RYMALOV

In the growing complexity of the economic contradictions of contemporary capitalism, the contradictions of the agrarian and raw-material sphere in the world capitalist economy have become markedly more important.

The erosion of the colonial pillars of imperialism, the marked growth in the postwar period of the dependence of its industrial centres on external supplies of many types of industrial raw materials, and especially of energy resources, the acute shortage of food in most parts of the Third World, and the leaps and bounds in the prices of raw materials and foodstuffs, unprecedented in peacetime, all add up to evidence of grave disruptions in the historically rooted system of the international capitalist division of labour.

The crisis processes within the system are especially acute because of the runaway inflation, the cyclical drops in industrial production, the competitive fight among the international monopolies and the inter-imperialist rivalry, which have acquired great scope in the recent period.

The economic crisis, which became unusually powerful in 1974 and 1976, went further to intensify the instability of the traditional structure of capitalism's world economic ties.

The dominant tendency in Western scientific and especially propaganda writings is the urge to explain the crisis phenomena in the

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agrarian and raw-material sphere of contemporary capitalism as being chiefly due to the various political or external economic acts of the newly-free countries. Indeed, the struggle carried on by the young national states to establish real control over their natural wealth and resources, to attain genuine national sovereignty and bring about a fundamental break-up of the international relations based on the imperialist principles of inequality and exploitation has largely made for the growing instability of the world capitalist economy today. But the roots of this process lie much deeper than the political and socio-economic consequences of the break-up of the colonial system. The bourgeois mode of production itself tends to engender, as it develops, the most acute international economic problems which it now has to face.

COMMODITIES AND MANUFACTURING

As the world capitalist economy develops, the internationalisation of its agrarian and raw material sphere has inevitably been intensified, with a steady growth of demand in the industrial centres for imports and exports of raw material commodities. After the Second World War, this dependence acquired a number of specific features which, for their part, result from the large-scale and highly contradictory processes in the basic industries both in the capitalist and in the developing countries.

The important changes in the structure of manufacturing have had a crucial impact on other branches of material production, predetermining many tendencies in the development of agriculture and extraction in the postwar period, notably the relatively slow rate of growth in the agrarian and raw material sphere as a whole (see Table 1).

In the period under review, real output of agrarian and raw material commodities in the non-socialist world increased 2.15-fold. Although this growth has on average been higher than before the war, it has been extremely uneven and has gone on in leaps and bounds. Thus, from the first half of the 1950s to the early 1960s, its rate was much lower than the average population growth rate, just slightly surpassing the latter for the period as a whole. From 1963 to 1974, the average annual increase in the output of agrarian and raw material commodities per head of the population as a whole came to 0.1 per cent, whereas the figure for manufacturing came to 3.4 per cent.

As a result, there was a marked decline in the role of agrarian and raw material commodities in the overall social product in the world capitalist economy. On the eve of the war, these commodities' share in the gross domestic product (GDP) of all the countries in the non-socialist world was only 6-8 per cent lower than the share of manufacturing, but by the mid-1970s, the share of the latter was 3.2 times higher than the figure for the agrarian and raw material commodities.

These aggregated results testify to cardinal changes in the structure of material production in the world capitalist economy over a very short historical period. Of course, they require further analysis, especially in the light of the fact that the sharp aggravation of the crisis processes within the world capitalist economy in the past few years has ever more visually shown the inability of state-monopoly capitalism to solve the consequent acute economic and social problems, including the problems arising in world economic relations among the capitalist and the developing countries.

These developments emphasise the legitimacy of the growing struggle in most emergent countries for the earliest build-up of an industrial foundation for their national economies, and against the neo-colonialists' moves to preserve the agrarian and raw-material character of their economies, thereby keeping them in their dependent state within the world capitalist economy. In this struggle, to which the socialist community countries have given powerful support, the newly independent states now face fresh and broad opportunities. L. I. Brezhnev said at the 25th Congress of the CPSU: "It is quite clear now that with the present correlation of world class forces, the liberated countries are quite able to resist the imperialist diktat and achieve just—that is, equal—economic relations."[1]

Table 1

Growth of Production of Agrarian and Raw-Material Commodities and Manufactured Goods in the World Capitalist Economy

	1953 (1938=100)	1963 (1953=100)	1974 (1963=100)*	1974 (1938=100)*
Indices				
Agrarian and raw-material commodities	145	115	129	215
Manufactures	207	161	183	610
Population growth	121	122	127	187
Average Annual Rate				
Agrarian and raw-material commodities	2.5	1.4	2.3	2.1
Manufactures	4.95	4.9	5.6	5.15
Population growth	1.25	2.0	2.2	1.75

* Estimate
Calculated from: *Yearbook of National Accounts Statistics 1972; Statistical Yearbook 1971; Statistical Yearbook 1974; Monthly Bulletin of Statistics*, February 1976.

There is no doubt that the volume of agrarian and raw-material commodity output in the former colonial periphery of the world capitalist economy will continue to grow.

In the foreseeable future, its growth rate will perhaps, as in the past, be somewhat higher than population growth, while naturally lagging behind the growth rate in manufacturing. This is a natural tendency in the development of the productive forces, in the course of which there is a relative decline in the role of raw-material commodities in material production. Elaborating on Marx's law of the tendency of the rate of profit to fall, Engels drew attention to the fact that "the portion of value deriving from raw and auxiliary materials must decrease with the increased productivity of labour".[2]

In the 1960s and early 1970s, for every percentage point of increase in the output of agrarian and raw-material commodities in the world economy the output in manufacturing rose by an average of 2.9 per cent. This ratio, we believe, characterises objectively operating tendencies and warrants the suggestion that by the early 1980s the latter commodity group could surpass the former at least four times (in value terms on the basis of constant prices). This assumption is also reinforced by the constantly growing industrial output of man-made substitutes for natural raw materials.

Meanwhile, an analysis of the long-term tendencies in world economic development shows that the demand for raw and other materials, whose resources are not unlimited by any means, has been steadily growing. That is why there is an ever more intense inter-imperialist struggle for the possession and re-distribution of sources of these materials, one of whose consequences has, in effect, been the unprecedented aggravation of the agrarian and raw-material problems facing the world capitalist economy in the recent period.

Agriculture accounts for the greater part of the entire world production of agrarian and raw-material commodities. According to UN statistics, at the end of the 1950s, agricultural commodities accounted for over four-fifths (including almost two-thirds for food), and the extractive industry for less than one-fifth (17 per cent in 1958). It is true that the ratio has not remained unchanged. Over the postwar period, the mining of mineral raw materials has developed very much faster, with the result that by the mid-1970s it accounted for one-quarter, while the share of agriculture dropped to three-quarters.[3]

MANUFACTURING

The production of mineral raw materials continues to be the main source of raw materials for the leading branches of manufacturing and energy industries. From 1938 to 1974, the physical output of mineral raw materials in the world capitalist economy increased 3.7-fold, and oil and gas taken separately—8.6-fold. An analysis of postwar economic development both in the industrialised and in the Third

World countries suggests that mineral raw materials are bound to have an even greater role to play in agrarian and raw-material output in the non-socialist world.

Over the past few decades, important shifts have materialised in the distribution of production in the extractive industry for the two groups of countries in the world capitalist economy (see Table 2).

Table 2

Growth of Extractive Industry in Capitalist and Developing Countries[1]

	Capitalist countries				Developing countries			
	1938	1953	1963	1974	1938	1953	1963	1974
Indices								
All industries	100	150	185	230	100	235	556	1,280
including oil and gas	100	215	280	425	100	350	1,000	2,600
Share of country groups in extractive industry[2] (per cent)								
all industries	83	80	68	55	17	20	32	45
including oil and gas	79	70	51	40	21	30	49	60
Share in total extractive output (per cent) oil and gas	24	33	35	40	40	58	71	75
other mineral raw materials	76	67	65	60	60	42	29	25

[1] Physical volume of production.
[2] Total for the world capitalist economy=100 per cent.
Calculated from: *Statistical Yearbook 1968; Yearbook of National Accounts Statistics 1972; Monthly Bulletin of Statistics*, February 1976.

First of all, the disproportions in the production of mineral raw materials have markedly increased. On the eve of the Second World War, the bulk of it—over four-fifths—was concentrated mainly in North America and Western Europe, which meant that manufacturing and energy industries in the capitalist countries then relied mainly on raw materials produced in the industrial centres of capitalism.

However, in the course of the Second World War and in the early postwar years, the tendency towards a growing role for the agrarian and raw-material periphery of world capitalism began to pick up. From 1938 to 1953, the quantum of the mineral raw materials extracted in that area increased more than 2.3-fold, and only by 50 per

cent in the developed capitalist countries. Subsequently, this tendency markedly intensified. From 1953 to 1974, the extractive industry in the Third World countries grew at an annual average rate of 8.4 per cent, and in the industrial centres of capitalism by 2.1 per cent.

As a result, the developing countries' share in the total output of mineral raw materials in the non-socialist world increased 2.65-fold, from 17 per cent in 1938 to 45 per cent in 1974. Of course, a part of this went to meet the developing countries' own requirements, but the lion's share is still earmarked for export to the developed capitalist countries.

There are good grounds for the assumption that even considering the relative decline in the share of the extractive industry in overall industrial output in the non-socialist world from 13 per cent in 1938 to 6.7 per cent in 1974, the industrial centres of capitalism will continue to face a growing need to secure for their economy various minerals extracted in the Third World. Let us also bear in mind that many easily accessible deposits in the developed capitalist countries have already been worked out, while large and economically more attractive deposits are located in Asia, Africa and Latin America.

In view of all this one could assume that the Third World's share in the extractive industry of the world capitalist economy can increase significantly to two-thirds of total output by the mid-1980s.

This process has been most striking in the oil and gas industries, which in 1974 accounted for over 55 per cent of world extractive output. From 1938, oil and gas output increased 8.7-fold, including 4.2-fold in the industrialised capitalist countries and 26-fold in the newly independent states. The following figures are indicative: in the late 1930s, roughly four-fifths of oil and gas was extracted in the former group of countries, chiefly on US territory, but by the mid-1970s this had dropped to about two-fifths.

The shrinking potentialities of the industrial centres of capitalism in supplying themselves with mineral raw materials are an important objective factor helping to extend the economic ties between the industrialised and the agrarian and raw-material countries. But the monopolies' urge to use the advantages of the international division of labour for their own narrow interests just as objectively and inevitably leads to a further aggravation of the problem of supplying the industrial capitalist centres with mineral resources.

AGRARIAN PRODUCTION

The steady growth of deep-going structural contradictions in the world capitalist economy in the postwar period will also be seen from the long-term tendencies in the development of agriculture (see Table 3).

Table 3

Agricultural Production in Capitalist and Developing Countries

	Total			Including					
				Capitalist countries			Developing countries		
	1950	1963	1973	1950	1963	1973	1950	1963	1973
Indices	100	141	180	100	130	165	100	150	195
Share of Country Groups (per cent)	100	100	100	54	50.5	48.0	46	49.5	52
Share of Agricultural Output in GDP (per cent)	12	10	7.5	7	6	4	46	31.5	24

Calculated from: *Yearbook of National Accounts Statistics; Statistical Yearbook* for the corresponding years.

In recent decades, the growth of agricultural production has lagged markedly behind the other main sectors of the world capitalist economy. From 1950 to 1973, it grew at an average annual rate of under 2.6 per cent, which was much lower than the figure for the extractive industry, to say nothing of manufacturing, and slightly higher than the average population growth rate. As a result, the share of agricultural production in the aggregate product of the non-socialist world declined in this period by more than one-third, including roughly from 7 to 4 per cent in the developed capitalist countries, and from 46 to 24 per cent in the developing countries.

This tendency does not at all mean that there is some surplus of agricultural produce in the world capitalist economy. On the contrary, the crisis phenomena in the agrarian sphere are becoming ever more acute, there is growing shortage of foodstuffs in the overwhelming majority of the Third World countries, and growing inequality in the distribution of agricultural resources among the individual countries.

According to Robert S. McNamara, President of the International Bank for Reconstruction and Development, in the more than 100 developing countries with which the Bank is involved, almost 40 per cent of the population, or something like 800 million people, do not get the necessary minimum of foodstuffs and have to live on the brink of death from starvation.[4]

The markedly slower growth in the agrarian sphere of the world capitalist economy, as compared with the other sectors of material production, is a process which is characteristic not only of the

postwar period. Lenin remarked that the lag of agriculture behind industry constitutes "one of the most profound causes of disproportion between the various branches of the economy, of crises and soaring prices".[5]

There is now a further intensification of this historical tendency and an extension of the sphere in which it operates. The development of the internal contradictions of the economic system of world capitalism inexorably leads to an aggravation of the "traditional" and the emergence of totally new crisis situations in the agrarian sphere. In this context, let us note the following: over the past few decades, agriculture in the developed capitalist countries has for the most part been switched to the basis of a machine industry, which has opened up fundamentally new technical potentialities for boosting labour productivity. But within the framework of the whole world capitalist economy this has not resulted in any marked change in the volume of agrarian output per head of the population.

From 1950s to 1973, its growth in the industrial centres of capitalism turned out to be lower than the world average, coming to less than 2.2 per cent, whereas for the Third World countries it has amounted to roughly 3 per cent. As a result, in this period agricultural output in most Third World countries nearly doubled, while increasing by less than two-thirds in the leading centres of capitalism.

According to some estimates, in the 1960s and early 1970s about one-fifth of agricultural output consisted of non-food commodities, the bulk of which is used as raw materials in manufacturing.

One of the specific features of the agrarian and raw-material sphere is that a growing part of its produce is processed in the food industry. In the recent period, this industry in the developed capitalist countries has grown roughly four times, and in the developing countries three times faster than the production of primary foodstuffs.

SCALE OF INTERNATIONALISATION OF PRODUCTION

In the postwar period, the international trade in agrarian and raw-material commodities has grown slower than trade in manufactured goods, with the result that its role on the world capitalist market had markedly declined, while the share in the aggregate exports of the non-socialist countries dropped (from 1938 to 1973) to nearly one-half—from 56 per cent to 33 per cent—in constant prices.[6]

Nevertheless, the tendency towards the internationalisation of social production has exerted, especially in the past few years, a growing influence on the development of the agrarian and raw-material industries in the world capitalist economy.

In this period, international trade in agrarian and raw-material commodities (in constant prices) increased 3.6-fold, while the physical volume of production went up 2.1-fold. In other words, the demand for these products on the world market was well in excess of demand for them on the domestic markets of the individual countries.

Is this a specific feature of the recent period? While international statistical data are not entirely comparable, they suggest that in the earlier decades of the 20th century (with the exception of several years in the interwar period, especially during the cyclical crisis of 1929-1933 and the subsequent economic depression) foreign trade in agrarian and raw-material commodities grew much faster. Thus, from 1936 to 1938, its physical volume was more than double the 1900 level, while production of these commodities went up by 77 per cent.[7]

The aftermath of the war had the worst effect on international trade in agrarian and raw-material commodities. Its re-establishment was much slower and more difficult than that of trade in manufactured goods. Only by 1953 did the quantum of this trade rise to the 1938 level, while international trade in manufactured goods had by then risen to more than two times that level.

In wartime, many capitalist countries were forced to pursue a policy of the utmost self-sufficiency in agrarian and raw-material commodities, including the development of man-made substitutes for natural raw materials. This tendency has variously continued over a number of years.

The powerful postwar upswing of the national liberation movement in the countries of the agrarian and raw-material periphery of the world capitalist economy, and the cold war started by the aggressive circles of the imperialist powers facilitated this course of events. As a result, right until the early 1960s a larger share of raw-material production than that before the war was earmarked for domestic consumption.

But at that point, under the impact of the objective requirements of the capitalist countries' economy, there was an increase in the rate of their international trade in agrarian and raw-material commodities, and this markedly exceeded the growth of their production. From 1963 to 1973, output in fixed prices went up by 27 per cent, and international trade by 87 per cent, including trade in raw materials and foodstuffs by over 69 per cent, and fuel by 180 per cent.[8] The tendency towards faster expansion of international trade in agrarian and raw-material commodities as compared with trade on the national markets once again began to prevail on the world capitalist market.

Fuel has a place apart in this process. The steadily mounting requirements of the industrial centres of capitalism in energy resources, and the re-orientation of their energy balances from coal to oil and gas forced them increasingly to rely on external supplies of mineral fuel. The working of new large oil fields in the Middle East and elsewhere in the Third World, and the low cost of extraction, together with the vast profits made by the monopolies on their investments in the oil industry of the developing countries went to create favourable conditions for the rapid development of the international trade in fuel. This process was also stimulated by the growing demand for chemicals.

In contrast to other raw-material commodities, the quantum of the international fuel trade surpassed the prewar level by the end of the

1940s, and in 1973 was more than 8.5 times higher. In the recent period, the share of fuel in international trade has tended to grow, and more in constant than in current prices. From this it follows that in the period under review the index of fuel prices tended somewhat to lag behind the general movement of prices (see Table 4).

Table 4

Agrarian and Raw-Material Commodities in the Exports on the World Capitalist Market

	Agrarian and raw-material commodities (without fuel)					Mineral fuel				
	1938	1948	1953	1963	1973	1938	1948	1953	1963	1973
	1963 f.o.b. prices									
Exports ($000 million)	26.5	21.7	27.1	44.1	74.4	3.9	4.7	7.1	13.6	33.9
Share in total exports (%)	51.6	42.2	37.7	33.1	23.2	7.6	9.1	9.9	10.2	10.6
Share in exports of agrarian and raw-material commodities	87.2	82.2	79.2	76.4	68.7	12.8	17.8	20.8	23.6	31.3
	current f.o.b. prices									
Exports ($000 million)	9.2	24.5	29.5	44.1	120.9	1.7	4.9	7.5	13.6	57.2
Export price index (%)	100	320	311	286	463	100	244	244	233	393
Share in total exports	44.5	46.1	40.8	33.1	23.8	8.2	9.4	10.4	10.3	11.2
Share in exports of agrarian and raw material commodities[1]	84.4	83.2	79.8	76.4	67.9	15.6	16.8	20.2	23.6	32.1

[1] Total exports of agrarian and raw-material commodities = 100 per cent. Calculated from: *Statistical Yearbook 1972; Statistical Yearbook 1974.*

The subsequent successes in the anti-monopoly struggle carried on by the oil-extracting countries of the Third World to establish effective control over their own natural resources changed the course of this tendency. In 1974, fuel prices were nearly trebled. At the same

time, the index of world prices for foodstuffs went up by 30 per cent, agricultural raw materials by 20 per cent, metal ores by more than 30 per cent and so on.[9] But under the impact of the world cyclical crisis in the mid-1970s a reverse movement got under way. The IBRD's annual report for 1975 says that an important result in the cutback in industrial production and the measures being taken by the developed capitalist countries to ease the inflation was an overall decline in prices for most raw-material commodities (with the exception of oil) exported by the developing countries.[10] Such sharp fluctuations in the prices of agrarian and raw-material commodities were unprecedented in the postwar history of this market.

CHANGING STRUCTURE OF INTERNATIONAL TRADE

The growing instability and contradictory development of the world capitalist economy are visually reflected in the changing structure of the trade in agrarian and raw-material commodities. Let us bear in mind that there are important differences between the key value characteristics of these long-term tendencies in constant and current prices, although both reflect the same process.

Thus, in 1973, exports of agrarian and raw-material commodities, without fuel, in constant prices were roughly 2.8 times higher than in 1938, and in current prices—13.1 times higher. The corresponding figures for fuel exports growth came to 8.7 and 33.6 times, and for manufactured goods—10.1 and 33.7 times. This disproportion in the changing share in constant and current prices is due to the grave disruptions in the mechanism of supply and demand for the individual commodity groups which had taken shape at the earlier stages in the development of the capitalist economy, largely caused by the growing uncontrolled activity of the international monopolies.

All of this makes it very hard to bring out the postwar growth in the share of agrarian and raw-material commodities going to the world capitalist market. Still, on the strength of UN statistics one could assume that before the Second World War its export quota came to about one-fifth (in 1963 prices). After some decline at the end of the 1940s and in the first half of the 1950s, the share of exports in the output of agrarian and raw-material commodities once again began to grow and by the early 1960s had exceeded one-quarter, and a decade later came close to two-fifths.[11] Consequently, in the early 1970s, as before the Second World War, the development of the international division of labour in the agrarian and raw-material sphere of the world capitalist economy on the whole remained on a higher level than it was in manufacturing, where, according to 1973 data, about one-third of the products went into international trade.

Taking the first half of the 1950s, when the prewar level was reached, as the basis for an analysis of contemporary tendencies in the international trade in agrarian and raw-material commodities, one will find the following specific changes in the structure of the international division of labour over the past few years (see Table 5).

Table 5

Quantum of Trade in Agrarian and Raw-Material Commodities on the World Capitalist Market[1] 1953=100

Exports	Imports					
	All countries		Including			
			capitalist		developing	
	1963	1973	1963	1973	1963	1973
All countries						
Mineral and agricultural raw materials[2]	154	265	156	258	154	346
Foodstuffs	154	261	156	266	149	249
Fuel	200	504	238	650	130	226
Capitalist countries						
Mineral and agricultural raw materials	189	355	182	327	256	682
Foodstuffs						
Fuel	161	355	182	424	86	105
Developing countries						
Mineral and agricultural raw materials	119	173	120	169	105	192
Foodstuffs	133	184	130	179	145	197
Fuel	217	576	270	795	143	264

[1] In 1963 f.o.b. export prices
[2] Without fuel
Calculated from: *Statistical Yearbook 1972; Statistical Yearbook 1974.*

First of all, there was a considerable rise in the role of the industrialised countries as exporters of raw-material commodities (with the exception of fuel). Their exports increased in constant prices almost 3.6 times, with the import of raw materials to the developing countries going up at an especially fast rate (6.8 times). This markedly intensified the dependence of the latter's industry on the import of raw-material commodities from the industrial centres of capitalism.

At the same time, even if on a smaller scale, there was also a growth in the industrial centres' requirements in raw materials for

industry coming from the former colonial periphery of the world capitalist economy. From 1953 to 1973, the quantum of their raw-material commodity imports from the Third World countries increased by more than two-thirds, but the main increase in their imports still fell to their trade with each other, whose volume in that period increased roughly 3.3 times. At the end of the 1960s and in the early 1970s, this line of trade in mineral and agricultural commodities came to an average of 8 per cent a year.

Thus, under the current scientific and technological revolution in the leading capitalist countries their economy's requirements in natural raw-material imports for industry have, far from declining, in effect shown a clear tendency to expand. From 1963 to 1973, for every 10 percentage points of growth in their manufacturing output they required to increase their raw-material imports by 8.2 per cent. In the developing countries, the growth of manufacturing industry on the same scale entailed a growth in raw-material imports by 10.8 per cent.[12]

This suggests that with the growth of the industrial potential of the two groups of countries there is bound to be a growing demand for the basic types of mineral and agricultural raw materials. According to our estimates, if these tendencies are maintained, the demand may well lead to an expansion of real international trade in natural raw materials by at least 50 per cent in the mid-1980s, as compared with the early 1970s. The developing countries' requirements in such raw materials may well expand at a faster than average world rate.

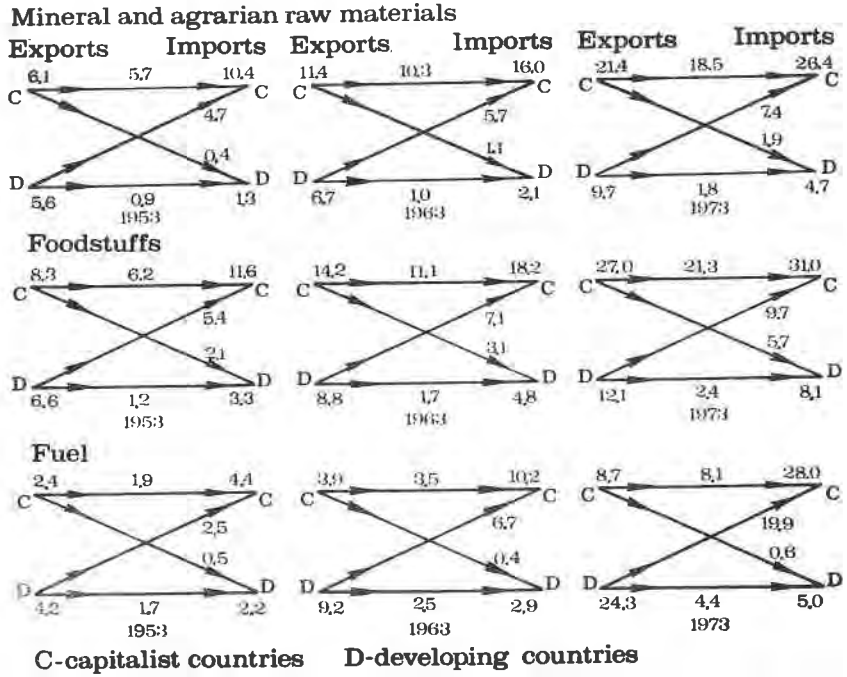
Considerable changes have taken place in the foodstuff trade, whose quantum from 1953 to 1973 increased more than 2.5-fold, with the export of food from the developed capitalist countries increasing more than 3-fold. As a result, the overwhelming majority of the developing countries, once important suppliers of food to external markets, have either become or are becoming pure importers of such products. The faster growth of the population, with a continuing lag in agriculture in many of these countries, has markedly intensified their dependence on external supplies. From 1953 to 1973, the developing countries' quantum of food imports from the capitalist countries increased by nearly 2.8-fold, and their mutual trade in food nearly doubled. According to FAO, by the mid-1980s, the Third World countries will have to import 85 million tons of grain, or three times more on average than in the 1969-1972 period.

However, trade in food within the group of industrialised capitalist countries has proved to be the most dynamic area of the postwar international food trade, its volume increasing 3.4 times. In the late 1960s and early 1970s, it had an average annual growth rate of 11.8 per cent, and within the Common Market, 21 per cent.

These tendencies aggravated the already huge disproportion in the distribution of food products within the world capitalist economy, and their ever greater concentration in its centres. The growth of this disproportion under the impact of the antagonistic regularities governing the development of the capitalist economy inevitably led to an extreme aggravation of the food crisis in the 1970s.

BREAK-UP OF TRADITIONAL TRADE FLOWS

Long-term changes in the geography of the exchange in industrial raw materials, foodstuffs and fuel between the two groups of countries are expressed in the following figures (see Chart 1).



These calculations show first of all the considerable expansion in the volume of agrarian and raw-material ties on the world capitalist market. The industrial countries' share in total exports of mineral and agricultural raw materials increased in that period from 52.1 per cent to 68.8 per cent, including their exports to other developed countries from 48.7 per cent to 59.5 per cent, and to the developing countries, from 3.4 per cent to 9.3 per cent. However, their share of total imports slightly declined, because the Third World was importing raw materials at a faster rate.

The capitalist countries, however, continue to hold dominant positions in this area. In the early 1970s, they were importing over six-sevenths of all industrial raw materials involved in international trade. At the same time, there was evidence of a very substantial decline in the developing countries' share of such exports to the industrialised centres of capitalism (from 40.2 per cent to 25.4 per cent), and to other Third World countries (from 7.6 per cent to 5.8 per

cent). Meanwhile, the quantum exports continued steadily to grow in both groups of countries.

In that period, the quantum of food trade on the world market increased 2.6-fold, with the lion's share still falling to the capitalist countries, which in 1963 exported foodstuffs worth $8,300 million, and in 1973, $27 thousand million. In the early 1970s, nearly four-fifths of these exports were in their trade with each other.

At the same time, nearly four-fifths of the food products exported by the developing countries also went to the capitalist countries, but the share of these exports in the total food imports by the capitalist countries declined from 46 per cent in 1953 to 31 per cent in 1973. On the whole, in the early 1970s, per capita food import in the developed capitalist countries was seven times greater than in the Third World. There was a clear growth in the role of the capitalist centres as food suppliers for the developing countries. In the early 1970s, more than two-thirds of the imported food came there from the capitalist countries, the USA in the first place.

The bulk of this trade consisted of unprocessed commodities, among which cereals were of growing importance. Before the Second World War, net cereal exports from Asia, Africa and Latin America averaged 13 million tons a year, but in the late 1960s and early 1970s, net cereal imports by countries in the region exceeded 20 million tons a year. The figures given in Table 6 are highly indicative in this respect.

Table 6

International Cereal Trade by Countries and Regions

Countries and regions Net export or import (—) annual average for periods (mln tons)

	1934-1938	1948-1952	1960-1962	1969-1971	1972-1973
Capitalist countries					
USA	0.5	14.0	32.8	39.8	73.6
Canada	4.8	6.6	9.7	14.8	14.8
Australia and New Zealand	2.8	3.7	6.6	10.6	8.9
Developing countries					
Latin America	9.0	2.1	0.8	3.2	0.6
South and South-East Asia	2.4	−3.3	−5.6	−11.0	−14.8
Middle East and North Africa	1.0	−0.1	−4.6	−9.7	−13.7

Source: *Economic Report of the President*, Washington, 1975, p. 172.

Important changes have taken place in the fuel trade, leaving a marked imprint on the whole existing system of world economic ties under capitalism. In a few short years, the world fuel trade rose to a qualitatively new level. From 1953 to 1973, it increased almost six times, surpassing in value terms the level of international trade in all the mineral and agricultural raw materials.

That was the period in which the problem of the dependence of the capitalist countries' economy on supplies of energy raw materials, oil in the first place, became exceptionally acute. Fuel imports into the capitalist countries rose 6.5-fold, including imports from the developing countries, roughly 8-fold. In the early 1950s, the industrial centres of capitalism consumed about two-thirds, and in the early 1970s, more than four-fifths of all the fuel coming on the world market. The geography of fuel imports changed substantially, as mutual trade in fuel among the capitalist countries was markedly reduced: in 1953 it accounted for about 44 per cent, and in 1973, for only 29 per cent.

As a result, the oil-producing countries became the main sources of energy resources for the industrial centres, whose fuel imports from the developing countries in 1972 reached $19,900 million (on the basis of the 1963 prices), thereby surpassing the imports of all the other types of raw materials from the region, including food.

There was also a steady growth of demand for fuel among the bulk of the emergent countries which do not have the necessary energy resources: their fuel imports in that period more than doubled, chiefly through imports from other developing countries in Asia, Africa and Latin America.

These changes in international trade in the conditions of vigorous struggle by the oil exporting countries against the monopoly domination of their economy by foreign capital predetermined many of the specific features of the sharp aggravation of the energy problems facing capitalism. The flare-ups of the energy crisis in the early 1970s have had a painful effect on the balance of payments of most capitalist and developing countries and, consequently, on the whole system of their external economic ties. This crisis is, in effect, a reflection of the broader crisis that has hit the whole historically rooted agrarian and raw-material structure of the international capitalist division of labour, which rested on a colonial basis.

NOTES

[1] L. I. Brezhnev, *Report to the CPSU Central Committee and the Immediate Tasks of the Party in Home and Foreign Policy. 25th Congress of the CPSU*, 1976, p. 22.

[2] Karl Marx, *Capital*, Vol. III, Moscow, 1971, p. 261.

[3] See *Statistical Yearbook 1974*, p. 25 (these indicators are a sum-total for all the countries of the world, excluding the socialist countries of Asia).

[4] Robert S. McNamara, "Address to the Board of Governors", *IBRD*, Washington, 1974, p.2.

[5] V. I. Lenin, *Collected Works*, Moscow, Vol. 22, p. 94.

[6] Calculated from:*Statistical Yearbook 1974*, p. 55.

[7] See A. Maizels, *Industrial Growth and World Trade*, London, 1963, p. 80.

[8] See *Statistical Yearbook 1974; Monthly Bulletin of Statistics*, October 1975.

[9] See *Monthly Bulletin of Statistics*, December 1975.

[10] *World Bank Annual Report 1975*, Washington, 1975, p. 6.

[11] Calculated from: *Yearbook of National Accounts Statistics 1972*, p. 121; *Statistical Yearbook 1974*, pp. 11, 26, 55.

[12] See *Statistical Yearbook 1973; Monthly Bulletin of Statistics*, August 1974.

Philosophy and Natural Science

BONIFATI KEDROV

The latest revolution in natural science originated in the mid-1890s, and is still on. It began with the discovery of X-rays (1895), radioactivity (1896) and the electron (1897), which exploded the old, metaphysical notions of the atom as the ultimate and absolutely indivisible particle of matter, and of chemical elements that defied change and transmutation. Atoms turned out to be complex, destructible and divisible, and the chemical elements capable of being mutually transformed into one another. The old views were being broken up at root, and the break-up, according to Lenin, who analysed natural-science problems in several of his works, was abrupt, as any other revolutionary break-up of the old and obsolete always is.

Regarding the vast number of scientific achievements, Lenin laid special emphasis on those which gave science access to the two main parts of the atom, the nucleus and the electronic shell. The discovery of radioactivity and radium led to the cognition of the nucleus and nuclear transmutations, and the discovery of the electron and X-rays, to a cognition of the shell. In his articles, "The Three Sources and Three Component Parts of Marxism" (1913) and "Karl Marx" (1914), Lenin said that the discovery of radium, the electron, and the transmutation of the elements were the latest discoveries in natural science which provided remarkable confirmation of Marx's dialectical materialism. They enabled human thought to penetrate into the depths of the atom, and so into the depths of the microcosm. That was the

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origin of all the subsequent successes in atomic (electron and nuclear) physics.

The revolution in natural science consisted not so much in the experimental discoveries of the new properties of matter and new physical phenomena, as in the fact that these discoveries ran into sharp contradiction with the old theoretical views, conceptions and laws. This led to a resolute reappraisal of the old conceptions, laws and theories. So long as radioactivity remained a totally incomprehensible and unexplained phenomenon, its empirical discovery and the observation of some unknown phenomena connected with it could not yet bring about a revolution in physics. But when the theoretical explanation was suggested that it was the spontaneous disintegration of atoms, the spontaneous transmutation of chemical elements, this led to profound conclusions which at root destroyed the old metaphysical views of the atom and the elements. Consequently, the revolution was brought about by the emergence of a new theory, a new conception incompatible with the established views.

Applying this criterion of Lenin's to the subsequent development of physics, one will easily identify several stages in the latest revolution, of which he wrote in his *Materialism and Empirio-criticism* (1908).

The first stage covers the period from the end of the 19th century to the mid-1920s, when the electron theory of matter was developed and used as a basis for elaborating a new physical (electromagnetic) picture of the world in place of the old, mechanistic picture. This stage opens with the above-mentioned discoveries, and ends with the development of Niels Bohr's atomic model on the basis of the classical conception of the particle as a purely discrete entity. The efforts of Bohr and other outstanding physicists to overcome the contradiction between that model and reality eventually undermined the conception of the electron as a "classical particle". Like photons, electrons turned out to be dialectically contradictory entities: they behaved simultaneously like waves and like corpuscles.

The second stage of the revolution opened in the mid-1920 with the emergence of quantum mechanics. Together with the earlier theory of relativity, this brought about a complete revolution in the views of matter and the forms of its motion, and the character of the uniformities governing microprocesses. The by then obsolete electromagnetic picture of the world, which retained the most important features of the old, "classical conception", gave way to the new, quantomechanical-relativistic conception. The 1920s saw the continuation of virtually the same revolution in natural science whose beginnings Lenin had analysed. In his article, "On the Significance of Militant Materialism" (1922), he saw a continuation of the revolution in natural science, describing a single series of discoveries, from radium to Einstein's theory of relativity. Lenin characterised Einstein himself as one of the great transformers of natural science from the end of the 19th century.

The third stage is connected with the discoveries in nuclear physics. It opened on the eve of the Second World War with the

discovery of the neutron (1932) and especially with the discovery of the fission of heavy nuclei (uranium, etc.), the latter inaugurating the atomic-energy age (1939). This stage is not, in effect, complete to the present day, although the contours of the fourth incipient stage connected with physics' penetration into the very depth of elementary particles (proton, neutron, and so on) have been taking shape. This coming stage in the development of the latest revolution in physics began to originate in the last few years, but has yet to be fully established. If the revolution in physics is fully to enter upon that stage, there is need for new physical ideas and conceptions that would just as radically break with the old still dominant conceptions, as when the theory of radioactive fission abandoned the conception of the immutable atom or when quantum mechanics together with the theory of relativity abandoned its classical conceptions.

Shortly before his death, Bohr urged the need for physics resolutely to break with the established views, insisting that what the elementary-particle doctrine needed was a "wild idea". By this he meant one that would help to restructure the very basis of the existing views in a revolutionary manner. There was good reason why Lenin used to say that the human mind had discovered many wonderful things in nature and would go on to discover even more, and that all these discoveries were only an ever fuller reflection of the objective reality in the human mind.

THE CRISIS OF NATURAL SCIENCE AND WAYS TO OVERCOME IT

In his lifetime, Engels wrote about the revolution in natural science and showed that the progress of science kept providing fresh confirmation for materialist dialectics. After his death, facts testifying to these processes began rapidly to multiply. Simultaneously a new factor, which had not been in existence in the 19th century, emerged: philosophical reaction sought to use the progress of science and its revolutionary restructuring caused by the great discoveries in physics for its own purposes. As the old, metaphysical and mechanistic conceptions of matter, its particles, properties, motion, and types of uniformities in nature began to collapse, the idealists jumped in with the claim that materialism, which had allegedly shown itself to be bankrupt, was going down together with metaphysics and mechanicism. The imaginary collapse of materialism was backed up with references to the latest discoveries in physics, which allegedly proved that matter had disappeared, that pure, that is, non-material motion existed without being in any way connected with some material substratum, and so on.

The reactionary efforts to oust materialism from natural science and to supplant it with idealism and agnosticism produced an exceptionally difficult situation in physics, which was latent with acute contradictions. The relativistic changes of mass were interpreted as the disappearance of mass and of matter together with it.

The emission of apparently unlimited quantities of energy in radioactive disintegration was regarded as the birth of energy out of nothing. The presence of electrons in the structure of the atom was presented as evidence that matter boiled bown to electricity, and so on. It was impossible on this kind of methodological basis to develop correct physical theories, to put forward fruitful scientific hypotheses and to carry on the theoretical elaboration of the new physics in general.

The difficulties provoked by idealist philosophy in physics were, Lenin said, a crisis of physics, a crisis of natural science. This was a methodological crisis in science, and Lenin believed that it was, in substance, a combination of two diametrically opposite trends: first, the revolutionary break-up of the old laws and basic principles as an expression of the tempestuous progress in science, and second, the use of this break-up by the idealists and agnostics for the purpose of fighting materialism and seeking to oust it from natural science. That is the only sense in which the term "crisis" can be applied to the science of nature, for it carries no implication of any collapse or even stagnation of science itself.

In his *Materialism and Empirio-criticism*, Lenin characterised this contradictory phenomenon in the development of physics as a temporary zigzag, a transient and painful period in the history of science, an expression of its growing pains caused by the abrupt break-up of the old and established conceptions.

Like the latest revolution in natural science, the attendant crisis of natural science has gone through a number of historical stages, depending, first, on the philosophical school of idealism which came to the fore in the drive of reactionary philosophy on materialism, and second, on the concrete, natural-science, notably physical, problems which the revolution in science posed at that moment in broad philosophical terms.

At the beginning of the latest revolution in natural science, it was mainly the Machist school which speculated on the successes in physics. The Machists and the energeticists, who were akin to them, directed their main blow against recognition of the reality of atoms and molecules as particles of matter. But by the end of the first and the beginning of the second decade of the 20th century, this school was defeated: the reality of atoms and molecules and of other material particles: electrons, protons, photons, atomic nuclei, colloid particles, ions had been proved so convincingly and irrefutably that any attempt to cast doubt on their existence was met with ridicule from the scientists. The second decade of the 20th century was keynoted by the brilliant victory of materialism over empirio-criticism and energeticism; the culmination of the triumphant advance of materialism in physics came with the development of the model of the atom on the basis of the physical interpretation of Mendeleyev's periodical system of elements. The prediction on this basis of the existence and the subsequent discovery of new chemical elements—of protactinium in 1918 and hafnium in 1923—served as practical verification and

confirmation of the fact that materialism had shown natural science the right way.

The second stage in the latest revolution in natural science is also paralleled by another stage in the crisis of natural science in the capitalist countries. This stage is connected with the formation of the theory of relativity and quantum mechanics. Of course, neither theory contains within itself anything that is idealistic, and each is in complete accord with materialist dialectics. The attempts to violate these theories and milk them for epistemological conclusions in favour of idealism engendered the claim that the principle of causality had collapsed (whereas, in fact, it was only a limitation of the principle of mechanical causality and of its inapplicability to the sphere of microphenomena). Space and time were interpreted in terms of subjective idealism. The interaction between the subject and the object in the study of microprocesses was said to be due to their indivisibility, which is why physical instruments were assigned a role that had been given the wrong epistemological interpretation.

Accordingly, at the second stage, the crisis in physics (taken only in the above-mentioned sense, I repeat) resulted from the parasitic encroachments of the new school of subjective idealism (neopositivism) on scientific achievements in the second quarter of the 20th century. In the middle of this century, this school suffered a defeat precisely in that sphere of physics in which it had especially flourished and in whose falsification it had specialised for years, namely, quantum mechanics. At the beginning of the second half of this century, the leaders of this school openly broke with subjective idealism.

Consequently, the idealist onslaught on materialism ended, as it did at the first stage, with the defeat of idealism. Materialism celebrated a fresh victory over idealism in the sphere of physics as well. At the same time, in the 1930s and 1940s the school of neo-energeticism came to the fore in the sphere of nuclear physics in view of its subject-matter and practical purposes to which it was being put. This school suggested that the discovery of the technical uses of atomic energy served as experimental evidence that matter (mass, to be more precise) was transformed into energy. By the mid-20th century, this false conception was also overthrown, notably, through the writings of Academician S. Vavilov and of Soviet philosophers dealing with the philosophical aspects of natural science.

The development of the neutrino hypothesis (1931) provides a remarkable illustration of the fruitfulness of the correct methodological approach to the solution of scientific problems. It had been discovered that a ß-radioactive nucleus tends to lose roughly twice as much energy in fission as is being carried away by the electrons (ß-particles) which escape from it. The initial suggestion was that half the energy was being destroyed in the process. Had this idea taken root in science, there would naturally have been no inducement to seek other explanations for this fact.

By contrast, Pauli proposed a materialist hypothesis, although he himself inclined to neopositivism. He expressed the idea that the

undiscovered half of the energy lost by the nucleus was being carried away by the neutrino particles of matter which were still to be discovered. These, he said, had no electric charge or mass (or had an insignificant mass), which is why they had not been detected experimentally for the time being. It further transpired that, like electrons, they had half-integral spin.

The neutrino hypothesis had an exceptional role to play in atomic physics, and whole departments of science would have now been unfeasible without it. The history of the discovery of the elementary particle called the neutrino provides a classical illustration of what Lenin said in another context: "Materialism clearly formulates the as yet unsolved problem and thereby stimulates the attempt to solve it, to undertake further experimental investigation."[1]

Let us bear in mind that we have followed Lenin in designating as crisis the use by idealism of the continuing revolution in natural science, including physics. If crisis is taken to mean something else, then the epistemological and methodological difficulties now faced by natural science in the capitalist countries should, of course, be designated by another term. Whereas the methodological crisis in natural science has not been overcome in the capitalist countries, because the idealistic and religious outlook predominates there, in the socialist countries the crisis has been totally eliminated. This is due to the fact that dialectical materialism has become the dominant world outlook in the socialist countries, and this is the kind of way out of the crisis that Lenin had anticipated long before the socialist revolution triumphed in this country. He said that the crisis was temporary and transient and emphasised that the fundamentally materialist spirit in physics, as in the whole of modern natural science, would ride out any crisis, but only provided dialectical materialism was substituted for metaphysical materialism.

Some scientists in the capitalist countries now and again adopt dialectical materialism, although this kind of transition is not massive in any sense.

SOME PREVISIONS

In the period when Lenin was writing his *Materialism and Empirio-criticism*, as I have said, the old mechanistic picture of the world was disintegrating and a new one for that period, the electromagnetic, was taking its place. Many physicists took the new picture to be the ultimate truth. Only in the mid-1920s did it transpire that the electromagnetic picture of the world was no more than a milestone, a stage in the succession of the increasingly complexified pictures of nature, physical processes, the structure and properties of matter and its motion. The quantomechanico-relativistic picture of physical processes, which took shape in the 1920s and which supplanted the by then obsolete electromagnetic picture, offered an immensely more complex picture of the world of *moving matter*,[2] of which Lenin had written some 15-20 years earlier. But it, too, was not the ultimate conception to be established in science, and was also no

more than a milestone, so that it was bound inevitably to give way to another, even more complex picture, whose contours are taking shape at the present time.

One thing remains immutable and constant, and it is that this historical succession of pictures of the world are images, copies, or incomplete and roughly true reflections of moving matter, constituting the content of the world we study, a world which is external to our consciousness.

Let us cite one well-known example. Every book on dialectical materialism or philosophical problems in modern physics refers to Lenin's remarkable prevision that the electron is unfathomable. In 1908, Lenin said that the electron was just as unfathomable as the atom.

Why was that warning so meaningful at the time? Before the start of the latest revolution in natural science (that is, until the end of the 19th century), the atom was considered to be the ultimate and therefore fathomable particle of matter, or in other words, a particle whose knowledge capped man's knowledge of the whole world. This ultimate particle was said to have a very finite and limited number of properties and indicators whose knowledge absolutely fathomed its nature. The physical discoveries at the turn of the century showed that atoms were complex, destructible and unfathomable in the above sense. Two different conclusions could be drawn from this fact.

The first conclusion. The new discoveries meant that henceforth it was not the atom but the electron that was to be set up as the ultimate particle. Accordingly, the notions earlier applied to atoms now had to be applied to electrons. And this conclusion was, indeed, drawn by many physicists. But this merely put off the difficulties, without resolving them. It was subsequently bound to transpire that electrons were just as complex and destructible, which is why they, too, could not be regarded as being fathomable in the above-mentioned sense. As a result, the initially developed new conceptions of matter formed from electrons as its ultimate particles would once again have proved untenable, so that these futile conceptions would eventually have had to be abandoned just as the idea that the atom was immutable.

The second conclusion. The error was not a particular one, for the point is not that some concrete particle has been set up as the ultimate one, itself fathomable and helping to fathom the rest of the world. The error of the old physics was of a general methodological character, for the very idea that anything in nature was fathomable was false at root. That is why it was not right to apply to electrons or to any other particles of matter the notions which had earlier been connected with the ostensible indivisibility of the atom. The latest revolution in natural science has shown—and therein lies its greatest cognitive importance—that there are no absolutely ultimate stages in cognition which allegedly help to fathom the whole of the object being studied.

This gives us a profound insight into Lenin's remark about the electron being as unfathomable as the atom. Lenin wrote that nature was boundless, just as boundless as its tiniest particles (including the electron). In his *Philosophical Notebooks*, he connected the question

of relationship of the atom and the electron with the question of the unity of the finite and infinite. From Hegel's *Science of Logic* he took an extract which says that this unity is not an external juxtaposition of these terms, nor an improper connection contrary to their determination, and binding together entities separate and opposed and mutually independent and, hence, incompatible. According to Hegel, the finite and the infinite constitute an intrinsic unity which appears in each of these in such a way that there is no finite separate from the infinite and, conversely, no infinite separate from the finite. Each of these only "transcends itself" (according to Hegel), that is, each implies within itself its own negation, a passing beyond itself, a transition into its opposite, without either of these opposites having any advantages over the other. Finitude is only a passing beyond itself, which is why it contains infinity which is "its other".

Lenin suggested that these ideas of Hegel's should be "applied to atoms versus electrons",[3] so as to show "in general the infiniteness of matter deep within".[4] How this could be done will be seen from Lenin's remark which follows immediately after the one quoted above: "The connection (of all parts) of infinite progress."[5] The atom and the electron, according to Lenin, are not some ultimate capstones of the whole development of matter, or its absolutely simple forms, but merely separate and yet to be cognised stages in the endless development of nature, which means also the movement of our knowledge into the depths of matter.

Accordingly, in his *Materialism and Empirio-criticism*, Lenin emphasised that whereas yesterday mankind's descent in the cognition of objects did not go beyond the atom, and today beyond the electron and ether, "dialectical materialism insists on the temporary, relative, approximate character of all these *milestones* in the knowledge of nature gained by man's progressing science".[6] The substance of Lenin's conception is that the electron is only a lap, and not the final post on the path of scientific progress. This conception gave physicists a chance of avoiding scientific zigzags and the right methodological clue to the solution of the problem.

Unfortunately, many theoretical physicists took a different tack, preferring the idea that the electron was "finite" and "fathomable" and even had the form of a "point", in order to try to build an atomic model on the basis of the classical idea of pure discreteness, or, in other words, on the assumption that the electron was a classical particle in the form of a miniature electrically-charged ball.

It is well known that every attempt to build a model of the atom on that basis, which continued until nearly the mid-1920s, ended in failure, for the farther physicists moved along this path, the more obvious it became that the task could not be fulfilled if the electron was regarded as a classical particle, and that the growing difficulties and contradictions arising from the consistent application of that conception increasingly demanded that it should be abandoned.

The solution was found when Louis de Broglie and other theoretical physicists after him abandoned the idea of the electron being a classical particle, and adopted the then exceptionally bold

idea—a truly "wild" idea from the standpoint of "common sense"—that waves and corpuscles, and continuity and discontinuity were unities. As soon as the electron came to be regarded simultaneously as corpuscle and wave, in their intrinsic indivisibility, a fundamentally new way was opened up for the elaboration of the atomic model, and with it, of the whole sphere of microprocesses. But this discovery, in effect, embodied Lenin's idea that the electron was unfathomable, i.e., that it was complex, and that its properties and manifestations were diverse. The whole of quantum mechanics was erected and developed on just such a methodological basis.

However, attempts continued for a long time to base various computations in atomic physics on the assumption that electrons and other microparticles were completely simple and even had the form of points. In this way, these particles were seen as being deprived of internal structure and as capping the whole succession of the discrete forms of matter. Such views were upset by relatively recent experimental discoveries which made it possible to start the penetration of elementary particles themselves. These discoveries show that particles are not at all elementary in the absolute sense, just as chemical elements and their particles, atoms, turned out to be non-elementary in the same sense. Today, elementary physical particles are also regarded as complex, transmutable and having an internal structure which has yet to be clarified in detail.

In this way, while overcoming the inclination of many scientists to hold on to the old metaphysical ideas and notions, physics has steadily established the principles which Lenin put forward a half-century ago.

DIALECTICAL SUMMING-UP OF THE HISTORY OF NATURAL SCIENCE

Lenin emphasised the importance not only of philosophy for natural science, but also of natural science for philosophy, for he believed that the concrete data provided by contemporary natural science and its history should be taken as the basis for elaborating the whole theory of dialectics, its laws and categories, its principles, elements and problems. When enumerating all the departments of knowledge from which dialectics and the theory of Knowledge were to take shape, Lenin named a number of natural sciences and the history of the individual sciences, including the natural sciences as well.

Here, he believed, the history of natural science should not be taken in its empirical form, not in the form of a summing-up of historical facts or a description of individual discoveries, but in its logical and generalised form (or dialectically processed, as Lenin put it). From the dialectical treatment of the history of science and the history of all knowledge in general there should take shape and crystallise dialectics or, dialectical logic, as it is sometimes called, as a method of scientific cognition.

As a result of this treatment of the history of science and technology, the categories of dialectics appear as stages through which cognition runs successively in the study of any objects, notably,

the objects of nature. In this context, Lenin observed that there was need for a history of thought analysed from the standpoint of the development and application of the general conceptions and categories of logic.

This idea is central to Lenin's *Philosophical Notebooks*. He takes the categories of substance and causality as an example to show in concrete terms how the question should be formulated and analysed along these lines. This approach has something like two interrelated aspects: cognition of matter moves deeper down to a cognition (conception) of substance in order to discover the causes of phenomena. At the same time, real cognition of the cause is a deepening of the cognition from external phenomena to substance. To carry out this kind of analysis, Lenin says, there is need to make use, apart from the history of philosophy, of the quintessence of the history of natural science plus the history of technology.[7]

Today, the dialectical treatment of the history of natural science and technology is a vitally necessary and highly honorary task. Research in this direction holds promise of much benefit both for philosophy and for natural science in terms of elaboration of scientific method and its enrichment with new generalisations, so as to make this method adequate—and not only as a whole, but also in its particulars—to the contemporary level of the development of science, including natural science. This task is so important and meaningful that Lenin believed it to be a continuation of the work of Hegel and Marx. This must consist in "the *dialectical* elaboration of the history of human thought, science and technology".[8]

This work is complicated and time-consuming, for it requires the processing of a vast quantity of data from the history of natural science and technology, and also from their contemporary state.

ALLIANCE OF PHILOSOPHERS AND NATURAL SCIENTISTS

What has been said shows that Lenin regarded the relationship of philosophy and natural science as interdependence: philosophy helps natural science to solve its problems, and the latter, for its part, helps philosophy to tackle its own problems, and that this is achieved in either case through a philosophical summing-up of the results of contemporary natural science and its history. Both sides stand to gain from their contact and cooperation (and this was mentioned, in particular, by Alexander Herzen in his *Letters on the Study of Nature*, which he wrote in the 1840s).

If this two-fold task is to be tackled more successfully, there is need for a close and creative alliance between Marxist philosophers and modern natural scientists. The idea of such an alliance is one of the main—if not the main—idea of Lenin's article "On the Significance of Militant Materialism", where he says: "Modern natural scientists (if they know how to seek, and if we learn to help them) will find in the Hegelian dialectics, materialistically interpreted, a series of answers to the philosophical problems which are being raised by the revolution in natural science and which make the intellectual admirers of bourgeois fashion 'stumble' into reaction."[9]

I have emphasised this passage because I think it is of exceptional importance: success will be achieved only if Marxist philosophers learn to help natural scientists find the answers in materialist dialectics to the philosophical problems with which they are confronted in modern natural science.

In contrast to the philosopher, the natural scientist is not always acquainted with the various complicated philosophical problems, which is why it would be unfair to accuse natural scientists of all the philosophical sins. There is need for patient and—what is most important—friendly efforts to explain the crux of the matter. After all, what we want is an alliance and not administrative subordination of natural scientists to the philosophers.

In the same work, Lenin gave us an example of how this should be done. Just before Timiryazev published his article on the theory of relativity, which contained many incorrect views and bore the mark of positivism. The author referred to Lenin, whose statements he had failed to understand, and extolled the spontaneous materialism of natural scientists, claiming that this materialism and the experimental method were capable of keeping natural science on materialist positions and safeguarding it from attacks by idealism. But Timiryazev also rejected the theory of relativity, which he saw as a departure from experiment, something, he believed, that proved it to be idealist (incidentally, this reasoning of Timiryazev's was subsequently repeated on many occasions by those who sought to overthrow Einstein's theory, including some writers in this country).

Considering Timiryazev's article, Lenin welcomed the very fact that a philosophical journal, *Under the Banner of Marxism*, had printed an article by a natural scientist, for it was an earnest that the journal would succeed in establishing an alliance with modern natural scientists who inclined to materialism and were not afraid to stand up for it. As for Timiryazev's mistakes, these were, in fact, corrected by the whole of Lenin's article. He proved that without a solid philosophical grounding the natural sciences or materialism would be unable to stand their ground in the struggle against the pressure of bourgeois ideas and against the establishment of bourgeois ideology (while Timiryazev asserted the opposite). Even less can be achieved by spontaneous, that is, inconsistent, unconscious and unconsidered materialism.

NOTES

[1] V. I. Lenin, *Collected Works*, Moscow, Vol. 14, p. 46.
[2] See ibid., p. 280.
[3] Ibid., Vol. 38, p. 112.
[4] Ibidem.
[5] Ibidem.
[6] Ibid., Vol.14, p. 262.
[7] See ibid., Vol. 38, p. 159.
[8] Ibid., pp. 146-147.
[9] Ibid., Vol. 33, p. 234.

Sociology of Science

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Historical experience shows that the emergence and the development of the individual sciences and various special fields of knowledge have always gone hand in hand with an urge to comprehend the place of a given science (or its specific branch) within the overall system of cognition, to determine its subject-matter, and to comprehend the range of its basic problems and the character of the methods used. On the one hand, within a developing branch of knowledge concrete tasks are being tackled, research carried on, new problems mapped out, and so on. Simultaneously and parallel with this process there is a movement of thought aimed to clarify what a given science is engaged in doing, what it is, how it differs from its neighbours, and how it interacts with them. Of course, when we say "simultaneously" and "parallel", we do not take these terms in the literal sense, because the process may not be synchronous. What we mean is that the movement of science is always accompanied with a peculiar self-cognition of science which may assume various forms.

The science of science has turned out to be such a comprehensive sphere and instrument of the self-cognition of science developing

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under the scientific and technological revolution. In the process of its formation, it has quite naturally assimilated the old and traditional forms and instruments of the self-cognition of science. At the same time, it stimulated the development of new forms and methods of science's own cognition of itself, the need for which sprang primarily from its conversion into a mass profession, and of creative activity in this field into an undertaking by large collectives.

At the present time, it is possible to identify six basic types of research into science partially assimilated by the science of science in this or that form, and partially developing independently:

logico-epistemological research whose subject-matter is scientific knowledge itself, its structure, and the logic and dialectics of its development;

historico-scientific research, whose subject-matter is the concrete historical development of science as a whole and of its individual lines;

research into the structural-cum-organisational problems of scientific activity;

sociological research into science;

research into the economic problems of the development of science;

scientometric research, which, we think, should be regarded rather as a method of quantitative interpretation of processes in science; and

research into the psychology of scientific creativity.

All these lines and types of research into science are interconnected and relate to each other in a definite way, but here we should like to draw attention to something else, namely, that what has been said above about the "self-cognition of science" as a process attendant upon the development of the concrete sciences also applies entirely to the science of science itself, and to the various lines of research integrated in it, notably the line of research into science which has been designated as the sociology of science. We already have many works whose authors suggest a definite view of the substance of the sociology of science, seeking to bring out the range of problems to be studied in this field, and to present the history of its origination.

The state of affairs in the Western, primarily US, sociology of science may be judged from the available surveys written by well-known specialists in this field of knowledge. Thus, in a 1962 survey, B. Barber said: "The sociology of science is not now one of the most highly cultivated areas in sociology."[1] He characterised its state as being relatively stagnant, which he said was due mainly to the fact that there were not enough inducements for natural scientists to engage in sociology or for sociologists to get in touch with natural scientists, where they risked meeting with a cool reception. He believed that further revival in this field was possible only if these practical difficulties were overcome; the problem of developing the sociology of science, from his standpoint, was perhaps more of a practical than a theoretical one, being rather a problem of men than of

theories. That is why, perhaps, he did not define the subject-matter and the range of problems tackled by the sociology of science.[2]

In a survey published three years later, N. Kaplan gave an even more restrained assessment of the theoretical state of the sociology of science. He criticised Barber's views and said that there was still no acceptable elaborated conception defining the limits of the sociology of science and its chief objects of study. Without defining its subject-matter, he proposed that the problems it studied should be grouped round four basic themes: 1) the nature of science; 2) the nature of scientists; 3) the organisation of science; and 4) the relationship between science and society.[3] But he did not explain why he had included that range of problems within the sociology of science.

In 1968, the US scientist N. Storer defined the sociology of science as a study of the patterns of behaviour among scientists; factors exerting an influence on their behaviour; and the consequences of their behaviour for broader groups and societies to which they belong.[4] Among its fundamental questions he listed the character of relations between scientists, the rules regulating their behaviour in the context of the general purposes of science, and so on. In addition, he emphasised, the sociology of science deals with practical problems in stimulating creative activity, and so on.

Indeed, many of the questions of the sociology of science listed by Storer have to be dealt with, but what is also important is the methodological approach to this effort. Storer defined the problems in the sociology of science in terms which are typical of behavioural sociology, and tended to ignore the problem of the objective basis of science, which is of substantive importance from the standpoint of the theory of methodology.

Storer described the theoretical tradition within whose framework the range of problems had been formulated in his introduction to Merton's book, *The Sociology of Science*,[5] when he said that the shaping of the sociology of science in the West had begun in the 1930s with an impetus coming from the interest in analysing the social context in which scientific knowledge developed. He also noted the stimulating importance of the well-known paper presented by the Soviet. scientist B. Gessen, *The Social and Economic Roots of Newton's "Principia"*, at the Second International Congress on the History of Science and Technology. The ideas which his paper contained were developed and expressed in concrete terms in the works of British scientists belonging to the "Left political wing": J. D. Bernal, L. Hogben and J. Haldane, among others.

Further advance consisted in identifying, in the sum-total of the social factors behind the development of scientific knowledge, the factors which could become the subject of sociological analysis. Here the author indicated two tendencies. One of these is connected with R. Merton, who worked out the approach to science as a social institution with a definite ethical spirit, that is, with a system of ethical values and rules oriented upon the nature of science and regulating relations and activity in this field. Besides, Merton established that

professional recognition as a reward for scientific accomplishments was the main motive force in the activity of scientists and explained their readiness to abide by the rules of scientific ethics.

Another key contribution to the theoretical principles of the sociology of science, according to Storer, is the elaboration of the notion of scientific community, which is significant because it helps to concentrate attention on the social structure of science itself, instead of merely studying the social conditions in which scientific knowledge is obtained. It was first introduced in the 1940s and by the 1960s had become a basic notion in the sociology of science.

Finally, let us note the impact of Th. Kuhn's *The Structure of Scientific Revolutions* on the sociology of science. Some Western critics of Merton have said that Kuhn's work cast doubt on the possibility of a sociological study of science, which completely abstracted itself from the content of scientific knowledge. Storer has defended Merton from these attacks, believing that sociological research resting on Merton's theoretical scheme corresponds with Kuhn's definition of "normal science",[6] (which means research resting on one or several earlier scientific achievements recognised within a period of time by a definite scientific community as a basis for advancing practical activity) and that the sociology of science is able to take account of the content of knowledge in a specific way, namely, by drawing a line of demarcation between the cognitive and the social structure of science.

Storer's interesting historico-theoretical examination of the conceptual basis of the Western sociology of science leads him to draw a conclusion which differs from his 1968 assessment of its state, when he wrote: "For the present, though, we must look upon the sociology of science largely in terms of its promise rather than its accomplishments—for its major achievements both pure and applied, lie mainly in the not-too-distant future."[7] Subsequently, with the benefit of hindsight in the 1970s, he declared that towards the end of the previous decade the sociology of science had taken shape as a scientific discipline.[8] However, there is no evidence that since then any substantial changes have taken place in the sociology of science in the West. Despite some achievements, Western sociologists have yet to produce an acceptable conception of the sociology of science.

Nevertheless, regardless of whether they tend to over or underrate the state of the sociology of science, US sociologists are fairly unanimous in taking a positive view of the perspectives in this line of research into science. This is natural because science is obviously becoming an ever more important component of social reality and because its relationships with society are diverse and intricate, and its impact on social life has been growing at an ever more rapid pace. The sociology of science is naturally expected to produce theoretical elaborations that are of some practical importance in organisation and management in the sphere of science and its relationship with society. This gives much meaning to the discussion of the problems in the sociology of science and of the theoretico-methodological principles underlying its development.

Many Western sociologists of science, while not denying Marx's role in analysing the relationship between science and society or the contribution made to this branch of knowledge by Soviet scientists, claim that the fundamental ideas in the shaping of the sociology of science have come from M. Weber, K. Mannheim, W. Ogburn, R. Merton, T. Parsons, and other theoreticians who have had a great influence on the development of Western sociology.[9]

One element of the sociology of science in the West is the concrete empirical study of scientific activity first developed mainly in the 1930s, and especially in the postwar period. These have to some extent helped to identify the problems requiring concrete sociological study, but the embryonic state of the theoretical conception of science and the underestimation and even denial of the Marxist approach to science have not helped to integrate this research, which remains geared to narrow pragmatic purposes and is dominated by empiricism. The Western sociology of science has yet to produce an organic conjunction of theory and practice. The task of doing this and formulating a coherent conception of the sociology of science has been fulfilled by the sociology and science of science developing on the basis of Marxist principles. We believe that it is Marxist sociology that provides the scientific basis for studying the social problems of science and its interconnection with society.

Although social and philosophical thinkers have always taken an interest in the relationship between science (knowledge, scientists) and society, it was the Marxist-Leninist classics who showed the material basis for the development of science and its social nature and were the first to produce scientific principles for analysing the interaction between science and society. This makes them, in effect, the founders of the sociological study of science. Marx proved that with the development of machine production the technological application of science becomes a necessity and leads to the transformation of science into a direct productive force. But he also noted that science would always have a definite niche within the system of culture, serving as the basis for working out a world outlook, and that its social functions and role in social life would always be highly diverse. The propositions put forward by the Marxist-Leninist classics are still the theoretical premise and methodological basis for the sociological study of science.

In the Soviet Union, we have a long tradition, founded by Lenin, of various forms in the study of science and scientific activity. Let us recall that Lenin attached tremendous importance to the development of science under socialism, pointed to the contradictory condition of science in bourgeois society because of the social antagonisms objectively inherent in capitalism, and believed that socialism was the social system that was capable of using science in the interests of the whole of society, of converting it from an instrument used to exploit the working people into an instrument for their development, putting an end to the exploiting classes's monopoly of science. He suggested that the alliance of science and labour was a mighty force that nothing could withstand. No wonder then that the Communist Party and the

Soviet State have always focused their attention on developing science in this country.

In the 1920s, various studies of science were carried on in the Soviet Union, including economic and sociological studies, with an elaboration of the problems stemming from the organisation of science and its planning at various levels, and research into the psychology of scientific creativity. The results of this research undoubtedly had an effect on the form in which science is organised in the USSR. They were the basis for the idea of the science of science which was subsequently taken up by J. D. Bernal, who suggested the need to elaborate it.

Extensive studies of the social aspects of the development of science were begun in the postwar period, and no Soviet student of science now has any doubts about the need for research into science not only as a system of knowledge, but also as a social institution and a specific form and sphere of activity. Evidently this interpretation of science makes it the subject-matter of sociological research.

The general contours of the Marxist sociology of science could be outlined as follows. In contrast to the logico-epistemological studies of science, which have the content and form of scientific knowledge for their subject-matter, the sociology of science examines activity in the production of knowledge, which is regarded as a species of social activity in general. This activity is carried on within a definite system of relations, in definite forms of organisation and management, which are oriented (ideally) upon securing a steady increase of knowledge and its use in practice. Science is connected with other spheres of social activity, exerts an influence on these and is influenced by them in return. It is safe to say, therefore, that the subject-matter of the sociology of science is its functioning as a social institution within the framework of a definite society. But we do not feel that the problems in the sociology of science are confined to a study of the patterns, norms and motivations in the behaviour of scientists. The sociology of science examines not only the system of norms, but also the system of objective social relations arising in the movement of new knowledge from its emergence to its application in practice, and also the concrete forms of interaction between science and society, and between science and other social phenomena.

The theoretical basis of the sociology of science consists of the principles of the Marxist general sociological theory—historical materialism—which helps to understand the place of science in society. The sociology of science itself is, we believe, a special or particular sociological discipline resting on these general principles and applying them in the concrete study of intrascientific relations and the interconnection between science and various other components of the social whole. At the same time, the sociology of science is an essential department of the science of science as a comprehensive study which cannot abstract itself from the social aspects of science.

Such, we believe, is the substance of the sociology of science. Those in this country who write in various contexts on the problems of the sociology of science are agreed on the chief and basic principles

of the approach to science, while differing in various details. Thus, an interesting work, *The Sociology of Science*[10], put out by a group of Rostov scientists, tends to identify the sociology of science with the science of science. But as we have said the science of science deals with a much broader range of problems than does the sociology of science.

We feel that the subject-matter of the sociology of science tends to be narrowed down when it is defined as a branch of knowledge whose subject-matter is the interaction between science, as a social phenomenon, and society and its various institutions. Of course, it is impossible to make any sociological analysis of relations and activity in the sphere of science if science is divorced from its relationships with society, and if the processes going on within it are regarded outside their overall social context. An analysis of this interaction must underlie any research into the sociology of science, it is its core and initial principle. But it being a special branch this cannot exhaust its subject-matter. To really become a special branch of research, it must of necessity include the study of relations that form in the community of scientists. Without this the subject-matter of the sociology of science cannot be taken out of the general sociological theory—historical materialism—which has discovered the general laws and specific features of the interaction of science as a social institution with other social phenomena. In its turn the study of relations within science itself enriches the interrelation between science and society as a whole.

The sociological study of science is both of theoretical and applied importance. It is important theoretically because the study of activity in the sphere of science and the relations taking shape within it helps to understand and explain these, and to bring out their interconnection with the system of social relations in a given society. It is of applied importance because the sociological analysis of science helps to tackle the practical tasks in ordering and optimising scientific activity and enhancing its efficiency.

These two aspects should be differentiated but not contrasted with each other, because many purely theoretical problems spring from the solution of what appear to be purely practical tasks, and conversely, the elaboration of purely theoretical problems, when this is done earnestly and in depth, leads to conclusions which are important for practice.

Because the sociological study of science is a relatively new field, many of its notions, approaches and definitions have yet to be fully established and generally accepted. Indeed, many aspects of the solution of even the most cardinal and initial problems continue to be debatable.

But it is also obvious that the sociology of science can develop successfully only by providing the answers to the questions which the development of science itself poses before it, and only by reckoning with the changes and modifications within the social institution of science.

Sociological studies of science can be carried on at different

levels: at the microlevel, with a study of relations taking shape within scientific collectives in the process of immediate creative activity, and at the macrolevel, with research into science on the scale of states and science as a whole. The existence of these levels is objectively based on the fact that the development of science is determined by the operation of many factors, with various factors coming to the fore and producing peculiar problems at the various levels in the organisation of science. When considering the successes of individual scientists, the important problems are those of his talents, dedication, moral qualities, responsibility to society, social attitude, and so on. But nowadays, scientific achievements are hardly ever the result of individual activity, for as a rule the scientist works in a collective and his effort tends to influence the work of the collective. The efficiency of a scientific collective—laboratory, group, sector or institute—is not a mere sum-total of the efforts of its members, for the highly important thing here is the organisation of the collective, the style and level of management, the character of relations and the creative atmosphere in the collective, all of which are matters studied by the sociology and psychology of science.[11]

The activity of every scientific collective is a part of the overall functioning of science in the country (for the sake of convenience we omit a number of elements). If the development of science is to be promoted at this level, there is need to tackle problems of a totally different order. Thus, there is need to reckon with the fact that as the development of a scientific idea advances—from its origination to its application in production—scientific activity is itself carried on within an intricate system of relations: informational, organisational, economic, legal, ethical, and so on, and also of relations between science and production, and science and society. The ordering of these relations (like organising the information service, the financing of science, the conduct of the appropriate scientific policy, and so on) is a task in the management of science on the scale of the whole country.

Furthermore, the division of labour has broadly penetrated modern science, and it has various types of studies. Those which are designed to cognise the objective uniformities of nature and society are known as basic, while the task of applied research and the corresponding sciences is to apply scientific discoveries and to materialise knowledge in technical schemes, technological processes, and so on. Accordingly, one of the tasks in the management of science on the national scale is to secure the proper balance between basic and applied research.

While technological progress requires that science should develop ahead of the technological level, within the framework of the science itself basic research, as the basis of applied research, must run ahead of the arrangement of the corresponding applied research. It is highly important to secure the continuity of the process which starts in the sphere of basic research and culminates in the production effect. Only then will new ideas not tend to become "stale", but will rapidly yield fruit. These problems have to be tackled all the time, and success

depends on the organisation and cooperation of scientific research, the training and distribution of scientific personnel, the material back-up of science, and so on. Science has become so vast, important and intricate a system that it is no longer possible to rely in its management on things like intuition, personal experience, and so on, but only on the strictly scientific approach, which does not, of course, invalidate the significance either of the personal experience or the intuition of its leaders. The whole point is that science must be brought to bear on the management of science itself.

As in any other field, the tasks arising in the management of science require the use of data from its various departments. The sociology of science is a part of the complex of sciences on which management activity has to rely. Success in this activity largely depends on the regulation of the social relations within the sphere of science and its relationships with other social institutions. It is the prerogative of the sociology of science to study these ties and relations, and the social parameters of organisational and administrative activity.

Modern science is inconceivable without a modicum of centralised leadership, but excessive centralisation already tends to engender the danger of bureaucratisation in science. That is why there arises the question of improving the management of science and working out forms ensuring flexibility of management, its capability of swiftly responding to the new requirements which come to the fore in science and production and which help to create the conditions for the utmost development of creative initiatives within scientific collectives and on the part of every creative scientist.

The management of science requires the planning of science, the formulation of a strategy for its development, and the crucial problem here is to select the main lines of research. This is a fairly difficult task, because it is impossible to predict in advance the results that may be obtained in any basic line of research, for the whole purpose of basic research is to discover unknown laws and to probe the unexplored essence of phenomena and processes. It is not surprising, therefore, that when in the late 1920s and early 1930s we in this country first tried to plan scientific research, our numerous intellectual friends in the West expressed surprise, while most of the others declared it to be an absurdity. Some scientists abroad could not, others did not want to, understand that nobody in this country intended to plan discoveries, that nobody prescribed *what* and *how* the scientists had to discover. What was meant here was to create a system that would secure the collective ascertainment by scientists of the chief and most promising lines of scientific quest and pool efforts and resources in these lines of research. However, the Soviet experience which had been met in the West with such incredulity in the 1930s is now being accepted in all the industrialised countries. That is not to say, however, that we have solved all the problems in the planning of science, for here a great deal still remains to be done.

In order to avoid a one-sided approach in evaluating the perspectives in the development of science, there is need for special

analysis of the uniformities, logic and history of its development. Although it is up to the scientists themselves to plan the development of science, one should bear in mind that the formulation of a strategy for science is more than a natural-science problem, for it requires the study of many questions, including social, economic, structural-cum-organisational, methodological and psychological questions. There again we find the need for interaction between the natural, technical and social sciences. The solution of such comprehensive problems requires an allround elaboration of the systems approach.

Another major sociological problem of science is, as we have said, the problem of organising research on the level of scientific collectives and on the scale of the whole country. What is the essence of the problem? Let us bear in mind that the methods of planning scientific research and its organisation worked out in this country since the Great October Socialist Revolution have yielded and continue to yield tangible results, but there is always a need to see that the stability of these methods should be combined with flexibility to make possible the organisational back-up of new lines in science.

Most of the modern institutes engaged in basic research sprang from turn-of-the-century traditions and as a rule represent a definite science or a major branch of it. Before science was so differentiated and before the boundaries between the sciences were strictly demarcated, this principle for structuring scientific institutes was not merely justified, but was in fact the most rational one. Nowadays it tends to clash with the modern structure of science.

The differentiation of the sciences is an objective regularity in the development of knowledge, and the formation of new branches is bound to accelerate. As a result, new lines of research find it ever harder to find their place within the framework of established collectives and crystallised organisational forms. But because the new element is bound sooner or later to make headway, with however great a loss of time, the old institutes gradually tend to spawn a great many diverse extensions and superstructures, swelling out into an agglomeration of numerous laboratories, departments, sectors and groups which frequently have no more than administrative or organisational links. As they grow, such institutes cease to be manageable, lose their character of being a definite creative collective, and this has a negative effect on the solution of major fundamental problems calling for concentrated efforts.

Alongside the differentiation of the sciences, there is an ever deeper integration of them. Already, the solution of most major fundamental (and even applied) problems requires a comprehensive approach and involvement of specialists from various fields of knowledge. One way to ensure such an approach is to set up scientific centres with a group of independent problem or sectoral institutes, and this equally applies to the natural, technical and social sciences.

The internal structure of these institutes should also be improved. In most cases, the problem laboratories and problem groups could apparently be much more productive than permanent sectors structured on the sectoral principle. A study should also be made of

the optimal relationship within research collectives between the various categories of scientific workers and between scientific and ancillary personnel. Everyone knows the harm that comes from the shortage of technical personnel, when scientists have to do work below their qualification level.[12]

The rapid development of science and technology has posed the problem of the mobility of scientific personnel, their capability to switch from one field of research to another, however, closely related to the former. In these conditions, some retraining and mastering new lines and methods of research become inevitable. After all, the higher school is as a rule oriented upon the existing level of science and sometimes even—and regrettably—upon its old requirements. The difficulties arising in restructuring the problem spectrum and the structure of research institutes are frequently connected with this inability of some scientific workers to switch to a new line of research, even within the limits of the same branch of knowledge.

Man's intercourse with nature is mediated by his intercourse with other men. Nowadays, as the collective nature of scientific work tends rapidly to grow, deep-going changes take place in the mentality of the scientist and bear, in particular, on his motivational sphere. A powerful incentive for fruitful scientific endeavour comes from the scientist's awareness of his civic responsibility to society and his urge to dedicate himself to the service of his people. The disinterested yearning for new knowledge has also been one of the most powerful inducements for men of science. The enthusiasm which springs from the process of scientific creativity goes hand in hand with other motivations, like the urge for self-assertion, for individual self-expression, material well-being, and so on. These motivations should not be branded as base. Consider the individual's urge to enter mankind's historical hall of fame by making some discovery. The designation of a scientific law, theory or effect by an individual's name has always been—and still is—an attractive prospect, being seen as the highest reward which bears no comparison with material remuneration. But today, the situation is a different one because there are more and more "anonymous" discoveries, that is, those which are made by scores of men. In short, the hierarchy of motivations is the question that requires attention and socio-psychological analysis.

Another important sociological problem is that of accelerating the adaptation of young specialists in a scientific collective. All these problems cannot be tackled only in terms of common sense. There is a need for clear-cut and precise understanding of the existing situation and scientific substantiation of the measures being taken. Here it is impossible to do without serious concrete sociological studies, but they alone will not suffice either. It is necessary to make an in-depth study of the historical experience in the organisation of science and the logic of its development. This, for its part, requires good historico-sociological grounding and concrete knowledge of the forms and methods of work in the sphere of modern natural science.

This short examination of sociological and related problems in science shows, we feel, that their solution is of great practical importance in stimulating the development of science, and that the sociology of science can tackle these only in close collaboration with other disciplines analysing various aspects of the development of science.

In this sense, there is no dilemma of making a choice between the science of science or special disciplines. Indeed, the need for the science of science springs precisely from the fundamental inability of the individual disciplines making a study of science—like logic, psychology, history, economics, sociology, and so on—to produce not only a comprehensive but even anything like a complete explanation of the phenomenon of science. It is difficult to produce a definition of science, as we believe J. D. Bernal was quite right in saying, because each of these lines of research tends to define science—a multifaceted and complexified phenomenon—from its own angle, that is, as the subject of its own analysis. But there exists some single whole with which the "aspect analysis" of science has to correspond, if it is to determine its place in its cognition. Unless the connection between the subject of concrete analysis and the comprehensive conception of the whole is expressed at the moment the initial hypothesis is formulated, the results of this concrete analysis will be of no more than particular significance. In other words, the shaping of a comprehensive (systems) theory of the development of science, or the science of science, which takes an integral view of science, is nowadays an essential methodological condition and measure for the fruitful study of the individual aspects of the phenomenon of science by special disciplines. Science has now become such a powerful factor of social life that it has produced an insistent need to integrate all the available means, modes and aspects of its study, and simultaneously to effect a methodological formalisation of the subject of the various scientological disciplines (sociology, economics, psychology of science, etc.) precisely as an element in the integral analysis of science.

NOTES

[1] *Sociology Today. Problems and Prospects*, New York, 1962, pp. 226-227.
[2] See ibid., p. 228.
[3] See *Science and Society*, ed. by N. Kaplan, Chicago, 1965.
[4] See *American Sociology. Perspectives, Problems, Methods*, ed. by Talcott Parsons, New York-London, 1968, pp. 199-200.
[5] See R. K. Merton, *The Sociology of Science. Theoretical and Empirical Investigations*, Chicago and London, 1973.
[6] See Th. Kuhn, *The Structure of Scientific Revolutions*, Chicago-London and Toronto, 1962, p. 10.
[7] *American Sociology. Perspectives, Problems, Methods*, p. 213.
[8] See Storer's "Introduction" to R. K. Merton's *Sociology of Science. Theoretical and Empirical Investigations*.
[9] See, for instance, *Sociology Today*, p. 216.
[10] See *Sociology of Science*, Rostov-on-Don, 1968 (in Russian).
[11] See S. Mikulinsky, "The Science of Science as the General Theory of the Development of Science", *Social Sciences*, No. 1. 1974.
[12] See ibidem.

The History of Science and the Systems Approach

IGOR BLAUBERG

Systems research is a fairly extensive and ramified area of scientific knowledge today, within which there exist two fully specialised fields—theory and methodology, and the applied field. There have appeared quite a number of generalising writings which contain systematic descriptions of the entire range of systems research, analyse various systems conceptions, and evaluate their contribution to the development of present-day scientific knowledge.

In these conditions, it might seem, there is nothing very difficult in compiling a history of the systems approach, which has become a recognised scientific trend only in the second half of the 20th century, i.e., in our own days. The appearance of a "general system theory" can be dated with the utmost precision, practically down to the month. "I presented [this idea] first in 1937 in Charles Morris's philosophy seminar at the University of Chicago," wrote Ludwig von Bertalanffy.[1] However this optimistic claim is not borne out by an acquaintance with the content of these generalising works on the subject. The considerable increase in the number of publications on system problems has been accompanied, not by fewer but by more differences in the understanding of the essence of the systems approach and its role in present-day science. Many authors have given different interpretations to the term "systems approach" with the result that their attempts to reduce these interpretations to a certain

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uniformity have failed to date. Besides, a transformation in the views held on the matter by the same specialists has been seen with the passage of time.

As we see it, an explanation of the state of affairs should not be sought in the personal tastes and preferences of the authors of various writings on the subject. The causes lie much deeper and are primarily linked with the nature of the systems approach itself.

That approach is directed towards elaborating specific cognitive means that are in accord with the tasks of research into, and the construction of, complex objects. It comprises a kind of *methodological* core of the entire area of present-day systems research. Inasmuch as complex objects and the scientific disciplines studying them are so heterogeneous, this cannot but lead to different interpretations both of the essence of the systems approach, and the sum of the methodological principles in which that essence finds expression.

These difficulties are also made greater for the very idea of systems having existed in philosophy since antiquity.[2] As for the philosophical and general methodological principles of research into objects with complex organisations ("systems"), these have been exhaustively examined by the classics of Marxism. In the profundity with which the inner mechanisms of the functioning and development of economic relations in the capitalist system are dealt with, Karl Marx's *Capital* remains unsurpassed. It should be emphasised here that, in the process of writing *Capital*, Marx developed specialised logico-methodological means of systems research. The principles he formulated of the study of "organic wholes" were a vital component in the new methodology of scientific knowledge Marxism came out with when the traditional methods of classical science had been still predominant. That is why there is every ground to state that the ideas of the classics of Marxism, and the materialist dialectics they created have exerted a profound influence on the inception and content of the new direction in science, which we call the systems approach.

In its present-day form, which has been conditioned by the scientific and technological revolution of the 20th century, the systems approach has made full use of the wealth of ideas, principles and concrete devices of studies into highly organised objects of reality which is contained in the history of knowledge. It is not easy to analyse, on the plane of the history of science, this extensive methodological trend, especially when it is a question of any particular scientist's priority. It is common knowledge that even a quite definite scientific discovery does not immediately become a generally recognised fact of science, although things are usually straightened out with the passage of time. It is incomparably far more difficult to register the time and place of a methodological principle's appearance and all the more so that of a certain system of such principles. This registration cannot be based merely on an analysis of texts and the scientific notions used in them. These notions (and in our case: "system", "element", "structure" and the like) should be considered in the context of the entire conception, and the latter, in its turn, in the context of all science and its development trends. This

opens up opportunities for highly different appraisals and interpretations of the conception under study, among which interpretations and appraisals provided by authors themselves cannot, of course, be considered worthy of unqualified preference. As an example of this kind of interpretation let us consider Erwin Laszlo's *Some Characteristics of the Present-day Trend in Systems Research*,[3] which was written on the occasion of L. von Bertalanffy's 70th birthday. Systems researches today, the author asserts, are based on certain general premises, among which the following stand in the forefront:

1. Wholeness as a methodological and even ontological principle.
2. The integration of scientific knowledge as an ideal possessing real opportunities of implementation.
3. The unity of nature as a philosophical credo.
4. Humanism as a task and responsibility of science.[4]

What can be said about this list of general premises (or principles) of present-day systems research, as interpreted by E. Laszlo? Indeed, it can be acknowledged that, in one measure or another, they are shared by participants in the systems movement, although they are not always expressed explicitly by the latter. At the same time, it is obvious that the three latter principles, i.e., the integration of scientific knowledge, the unity of nature and the humanism of science, are *not specific* in systems research in the proper sense of the term. They are characteristic of fundamental trends in the development of *all* present-day science, which is why they cannot in any way be rigidly associated with any specific or even general scientific conception, whether L. von Bertalanffy's "general system theory", or any other individual scientific trend.

As for the first principle, that of wholeness, it is indubitably of fundamental importance to any systems research. Laszlo has associated its inception in present-day science with the transition to observation, experimental research and interpretation of phenomena of "organised complexity" (to quote from Warren Weaver), which did not yield to explanation on the basis of atomism and mechanicism. According to the author, it has proved that complex phenomena are something more than the simple sum of the isolated properties of causal chains, or properties of their components as analysed separately. Such phenomena, as shown by L. von Bertalanffy, should be explained not only through their components but also with due account for the sum of links between them. Inasmuch as classical notions do not permit any mathematically rigorous analysis of such links (which is already revealed in the three-bodies problem) attempts were made to find new notions and modes of interpretation. A feature of such seekings was the idea that the sum of interlinked events could be regarded as systems possessing functions and properties at a specifically integral level. It emerged that this integral approach was most productive in biology where it was first used in research by von Bertalanffy, and also found promising application in the social and behaviourist sciences. As a result, an ever increasing number of researchers have come to use the principle of wholeness as a methodology. Those of them with a philosophical frame of mind saw

in the principle of wholeness not only a valuable methodological device but also a well-grounded conception of an empirical world. This conception is now functioning as a fundamental premise in the sphere of present-day systems research.[5]

We have drawn so extensively from Laszlo's article because the above passage shows in sufficient relief a mode of analysis and appraisal of the history of systems ideas which cannot but evoke considerable objection. In his desire to emphasise the productiveness of a definite systems conception, the author has endowed it with positive qualities which, on closer examination, have proved a mere repetition of well-known truths. In his exposition, von Bertalanffy's actual services to science are yoked together with "discoveries" that cannot be ascribed to him. This refers in the first place to "priority" appraisals. The problem of wholeness as worded above ("the whole is greater than the sum of its parts") was raised even in antiquity and since then has been a constant object of philosophical reflection. That is why a striving to depict L. Bertalanffy as practically the father of the principle of wholeness, which is so widely applied in present-day science, can be ascribed only to a misunderstanding. Also inaccurate is the assertion that von Bertalanffy was the first to apply the wholeness approach in biology, an area in which he also had quite a few forerunners.

In this connection, it would be in place to adduce the testimony of V. Kremyansky, the Soviet researcher. In noting the guiding principles in Bertalanffy's biological theory—the notion of a system as one whole; the dynamic conception of life; consideration of the organism as primarily active; the notion of levels of organisation—he draws the following conclusion: "In all these propositions, Bertalanffy has come out as a systemiser, who has summed up the results of development in a number of organismic conceptions, mainly organicism."[6]

In conclusion, we shall also note another moot point in the above quoted characteristic of the principle of wholeness. Erwin Laszlo, who attaches great significance to its ontological interpretation, thinks that it functions in present-day systems research as an ontological conception. On the contrary, the heuristic role of this principle is linked mainly with its methodological function (for a distinction and analysis of the functions of the notion of wholeness in scientific knowledge see notes 7 and 8).

Thus the above-mentioned attempt to formulate the basic principles of the systems approach cannot be considered quite valid. We have already mentioned the causes which, in our opinion, account for the difficulty of resolving this task in its historico-scientific aspect. The difficulty arises, not only in a study of the systems approach as a whole but also in any appraisal of the actual content and scientific novelty of individual and narrow systems conceptions, as for instance von Bertalanffy's "general system theory". It has been shown in Soviet literature[9] that the "general system theory", especially in the expanded interpretation given it by Bertalanffy in the last years of his life, is not so much a theory in the strict sense of the

word as a grouping together of a number of disciplines which, in their sum, implement the methodology of the systems approach.

Consequently, the reference here is to several initial principles of systems research on whose basis those functions are determined. For a comparative appraisal of the content of these principles, one has to return to the sources of systems ideas which, in their turn, can be found in the history of science on the basis of the treatment of the systems approach we possess today.

There arises a quite unpleasant situation—a vicious circle.

It is evidently impossible to cope with this situation inasmuch the difficulty we have mentioned is not peculiar only to a study of the history of systems ideas but is of a far more general nature. In our case, however, the difficulties are made the greater by the existence of numerous unexplored areas on the map of the history of science. It has to be acknowledged that, in the elaboration of the systems approach, theory has been given a marked and evidently unjustified lead over history. Incidentally this situation cannot but reveal a certain positive aspect: the current state of work on the theoretical aspects of the systems approach is such that, as we see it, it permits an advance along the road of historical research by following sufficiently clear guidelines, and not by groping in the dark.

We shall attempt below to take a few steps in that direction, with the aim of at least shedding some preliminary light on some pages in the history of systems ideas in Soviet science.

* * *

An interest in evolving the general principles of systems and structural research may well be called a major tradition in Soviet science. The literature on the subject has dealt in sufficient detail with the fundamental features of A. Bogdanov's tektology, in which an attempt was made to formulate the general structural principles of organisation.[10] In regarding tektology as one of the first conceptions of general systems, Soviet researchers are far from idealising it; on the contrary, they have revealed a number of its negative aspects which are linked with Bogdanov's positivist errors and the elements of mechanicism inherent in him. At the same time, the reading public have far less knowledge of works by Russian scholars who, in certain respects, can be considered Bogdanov's forerunners. We are referring to writings by N. Belov and E. Fyodorov.

In an article published in 1911,[11] N. Belov, physician and physiologist, formulated the principle of negative feedback. To the best of our knowledge, A. Malinovsky was the first to indicate the close kinship between that discovery and the ideas of cybernetics.[12] The significance of N. Belov's conception for the theory of organisation came in for special consideration in an article by L. Petrushenko,[13] which incidentally contains the fairly sparse biographical data about the scientist which we possess today. Belov set forth his discovery as follows: "...the mechanism of the organism is probably based on principles of reverse structure. That principle can be, explained as follows: all organs and tissues are in such an

interrelation that if organ or tissue *A* affects another organ or tissue *B*, enhancing its life-activity, then *B* affects *A* in return".[14] Characteristically enough, this kind of interaction, which N. Belov called "parallel-intersecting" was not considered by him as specific in physiology alone but as a manifestation of a general law ("the law of closed spaces") operating in the sphere of mechanical, physical, chemical, biological and other phenomena—a universal law for all organised natural formations. From this approach there naturally sprang a striving to apply precise methods of research and description in biology and physiology. Belov was one of the first in the history of biology to attempt to build a general mathematical model of the ontogenetic development of the organism.[15]

But the significance of Belov's ideas does not lie only therein. What is most important to use is the fact that, in evolving the principle of negative feedback, he proceeded from the idea of the organism as a dynamic integral system in which all organic functions are so closely intertwined that any change in one of them leads of necessity to a change in others, those changes being controlled by a definite mechanism which allows the organism as a whole to maintain its existence in conditions of a non-stable environment. We shall note that this idea was formulated at least a decade earlier than the celebrated "organismic boom" in biology.

The doctrine of internal secretion in organs and tissues was the sphere of the concrete application of this concept of the organism in Belov's works. He divided the hormones operating in the organism into endohormones (reproduced in the organism itself) and exohormones (which enter the organism from without). He went on to emphasise that it is not each hormone taken separately that presents vast importance for the normal functioning of the various parts of the organism, but the "resultant of their forces", i.e., the combination of hormones among themselves. More precisely, it is not the latter that is important, since that combination can vary in greater or lesser degree but the totality of their action, which is a far greater constant magnitude, one that, if it does vary, does so within quite definite even if fairly broad boundaries. This feature of hormonic action, which is controlled by the mechanism of negative feedback, is of important adaptive significance. "The organism," N. Belov wrote, "lives in constant conditions of an equilibrium of little stability. Therein lies its salvation. If the equilibrium were stable, i.e., if the organism always functioned within one and the same combination, it could not adapt itself with the necessary ease to the introduction of an exohormone or in general to changes in the environment. These external variety would upset the internal stable equilibrium and the organism could perish. The presence of labile equilibrium and of a constant balancing enables the organism to adapt itself to new phenomena."[16]

The above, as we see it, goes to show that L. Petrushenko's thought contains ground to hold that Belov's idea of the organism as a dynamic self-governing system anticipated several of Bertalanffy's ideas on general biology.[17]

The scientific views of the prominent Russian crystallographer E.

Fyodorov (1853-1919) have been dealt with in far greater detail in literature, although far from the fullness and breadth they deserve. The scientist's biography has been written by I. Shafranovsky,[18] and is also the subject of a book by Ya. Kumok, which recently came out in the series "Biographies of Outstanding People".[19] These books, as well as a number of others on Fyodorov's scientific heritage, contain an appraisal of his contribution to crystallography and mathematics and make passing mention of his philosophical writings but have nothing to say on his ideas of the universal scientific principles of structure and organisation. The only exception is the article by A. Takhtajan,[20] in which Fyodorov has been with justice characterised as a precursor of tektology. A. Takhtajan has noted in particular that Fyodorov preceded W. Bancroft and A. Bogdanov in arriving at the conclusion that the Le Chatelier principle is universal. In Fyodorov's opinion, that principle reveals the "general mechanism of counteraction to external influences", whose operation can be seen not only in the sphere of physical chemistry but also in all other fields of reality, including biological, psychical and social phenomena. [21]

This conclusion was formulated in a fairly lengthy article "Perfectionism", which was accompanied by a summary in French. The article, according to the author, was written in the mid-1870s (exactly a century ago!) but he was unable to publish it at the time, so that it came out only in 1906, without any corrections by the author.[22]

Fyodorov designated as "Perfectionism" his doctrine of the general laws of perfection in nature. Of considerable importance for an understanding of the essence of those laws was the author's use of the notions of "organisation" and "adaptation" which are to be seen both in the simple field studied by physics and in the complex organic world. As distinct from classical physics, which studies individual phenomena, biology deals with organised collectivities, which acquire ever greater complexity according to the law of evolution. However, the subject-matter of physics does not remain unchanged, for, the author points out, science has in recent years gone over to the study, if not of organisms, then at least of collectivities of such complexity that "individual consideration of the elementary phenomena forming part of them is quite impossible for the human mind, and, besides, is quite superfluous".[23] The study of probabilities is a powerful means of studying such collectivities.

It is interesting to compare these ideas of Fyodorov's with the proposition advanced by Warren Weaver and widely quoted in systems literature, namely that classical science deals either with organised simplicity or with disorganised complexity (which is studied with statistical methods), while organised complexity is the subject-matter of present-day science.[24] It is worth recalling that a period of seventy years separates these two propositions.

In Fyodorov's opinion, the general line of perfection in nature does not coincide with enhanced adaptability. Thus life-stability is linked not with adaptability but with the capacity for adaptation. This is an expression of the law of perfectionism in biology, which characterises the dynamic aspect of life phenomena. A more detailed

formulation of this law runs as follows: "The future belongs to what is less orderly but possesses that which in the highest degree ensures greater orderliness, i.e., is marked by 'life (biological, psychological. etc.) mobility'. At any given moment, these elements are suppressed by orderly and adapted elements. In life, however, there takes place a constant process of the destruction of the latter and the advancement of the mobile elements of new and superior orderlinesses which, under the pressure of progressive life, perish in their turn, yielding place to even higher orderliness."[25]

"Perfectionism" was written by Fyodorov practically in his youth. There are even more grounds to suppose that the new generalising principles developed in it regarding the approach to heterogeneous phenomena of reality and seeking for universal scientific laws (what we would today probably call "systems orientation") left a trace on his further scientific activities. This methodological equipment probably played an important part in helping the outstanding scientist to effect a radical change in the style of scientific thought predominant at the time in crystallography (which was then regarded as a purely descriptive discipline), this placing him on a par with such outstanding contemporaries as Vernadsky and Mendeleyev.

Fyodorov often addressed himself later to his ideas of "Perfectionism", giving further development to the idea contained in it regarding the need to arrive at fully united knowledge, and the significance of synthetic knowledge at a time of ever greater scientific specialisation. In this connection, he attached great importance to mathematics.

In one of his last writings, Fyodorov expressed a thought which testifies to his ardent faith in the oneness of scientific knowledge (although the reader today may find it a little too optimistic): "It was only recently, only several decades ago, that the sciences were sharply divided from one another, even those standing most closely to each other, such as physics and chemistry. Who is the wise man who will today indicate the borderline between them?... It is questionable whether there really exist in general distinct borderlines between any sciences, whether all the sciences, taken as a whole, do not comprise something united and naturally indivisible; what is presented as the boundaries of a separate science is that not merely something artificial, far-fetched, and adapted in accordance with the level of knowledge at a given time?"[26]

We thus see that the idea of the integration of science does not belong exclusively to the systems movement of today....

However, we would not like the reader to form the impression that we place any doubt in general on the link between systems research and the idea of the integration of scientific knowledge. On the contrary, we consider it a characteristic feature of the systems approach that it expresses trends existent in present-day science towards a synthesis of knowledge; it is another matter that it is not the first or only trend in the history of science to give expression to such trends. An important integrating role belongs to notions used in present-day systems research and, first and foremost, to the focal notion of "system". It is obvious that it has advantages over such

terms as "collectivity" in the meaning used by E. Fyodorov, although the two stand quite close in content. The notion of "system" is richer in content than "structure", "function", or even "wholeness". It contains an anti-elementarist intention, an indication of wholeness and environment, and makes it possible to introduce ideas of "sub-system" and "suprasystem". Besides, mathematical traditions make it possible for the notion to orientate the system on an arbitrary multitude of objects, and not to restrict the choice of the object of research and the construction of the object of study. Finally, it is used in practically all the sciences and is therefore capable of performing a substantial integrating function.

But if this notion is to perform such functions, the researcher who makes use of it should be aware of the methodological demands that are conditioned by the functioning of the notion within the framework of the systems approach. In other words, since the notion "system" does not in itself contain such demands, which stem from the broader context of development trends in present-day scientific knowledge, the researcher working in the sphere of the systems approach should not lose sight of this guiding context.

That kind of broad orientation marks a work to which we shall devote the concluding section of this article. The reference is to "Essays on the Theory of Science" by the Soviet mathematician and logician G. Gruzintsev.[27]

In 1907, G. Gruzintsev (1880-1929) graduated from Kharkov University, where he was professor from 1910 to 1918. In 1918, he became professor in the Dniepropetrovsk Institute of Public Education. His mathematical interests dealt with the theory of functions and the theory of sets, and he was author of a number of works on logic, including a book entitled *Logic*, which was based on two reports on the problem of the "theory of science", delivered by the author in Kharkov in April 1927 at a joint session of research bodies.[28] He began by mentioning the substantial shift that had taken place in the most differing areas of contemporary scientific thought, a shift that could be seen in the Marxist theory of value, in the biological theory of heredity, the substantiation of geometry, the quantum theory and the theory of atomic structure, in the analysis of word structure in linguistics and so on. In the author's opinion, that shift was marked by three features: 1) the systems point of view, 2) relativism, and 3) exactitude or at least a striving towards it. The explanation given of that shift is highly significant: "It is based on the higher demands presented by modern science to its methods, demands created in considerable measure by the difficulty of the tasks set to it and irresolvable with the aid of the old logical means."[29]

In Gruzintsev's conception, a major methodological role belongs to the notion of system, which he defined as follows: "Any system is made up of elements, linked among themselves by definite relations, which, as a whole, comprise the synthesis underlying the system."[30] Characteristic of the systems point of view is the movement from a system towards its elements, inasmuch it precludes the idea that the properties of the elements determine the properties of the system.

The study of any object, whether complex or simple, is unbreakably linked with the study of the system it enters into.[31]

Two other principles of scientific research, in the author's opinion, are closely linked with the systems point of view and are concrete forms of it. "Relativism" (logical) consists in the accent being shifted from a study of properties to a study of relationships. "Exactitude" presupposes, in the first place, the discovery and formulation of the lesser system whose study is necessary for knowledge of a given object, and secondly, operation only within the limits of that system.[32]

The author also touches upon the question of the integration of science: "...from the systems point of view, the synthesis or unification of knowledge is not only its aim but an *essential condition* of a possibility of knowledge which we consider acceptable as such to us".[33] Gruzintsev's work is very rich in the ideas it contains and its use of notional means. The author introduces the notions of a monogenic system and a cognitive system (subdividing the latter into a registered and a cognitive systems in action); he makes use of an extensive arsenal of notions in the logic of scientific research and substantiation, and sets the task of creating a special science dealing with science and the scientific method.[34] It is beyond the scope of this article to deal in detail with all these problems; that should be the object of special research. It is regrettable, however, that G. Gruzintsev's interesting and original work, which is so topical in its subject-matter and treatment, was long beyond the field of vision of students of problems of the theory and the history of systems ideas. An acquaintance with it will expand our knowledge both of the content of these ideas as well as their development in Soviet science.

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This article has not set itself the task of conducting any special research into the history of science. The material contained herein is rather an extensive illustration of the thesis on the prime importance of a study of the history of systems conceptions and principles for an understanding of their content and place in present-day scientific knowledge. On the other hand, it should be emphasised that an appropriate appraisal of historically registered results in science is possible only from the viewpoint of a conception which is the most developed today. The greater the content and profundity of that conception, the richer the material it helps discover in the history of science. That is why a further elaboration of the principles of the systems approach—that on the general foundation of the methodology of dialectical materialism—is an essential condition and premise of successful research into the history of science in this area.

NOTES

[1] L. von Bertalanffy, "General System Theory. A Critical Review", *General Systems*, Vol. VII, 1962, p. 2.

[2] See A. Ogurtsov, "Stages in the Interpretation of the Systems Nature of Scientific Knowledge (Antiquity and Modern Times)", *Systems Research. Yearbook for 1974*, Moscow, 1974 (in Russian).

[3] See E. Laszlo, "Niektóre charakterystyki współczesnego nurtu badan systemowych", *Zagadnienia naukoznawstwa (kwartalnik)*, 1972, Vol. VIII, p. 2(30).
[4] See ibid., pp. 163-165.
[5] See ibid., p. 164.
[6] V. Kremyansky, *Structural Levels in Living Matter*, Moscow, 1969, p. 40 (in Russian).
[7] See B. Yudin, "The Concept of Wholeness in the Structure of Scientific Knowledge", *Voprosy filosofii*, No. 12, 1970.
[8] See I. Blauberg and B. Yudin, *The Notion of Wholeness and Its Role in Scientific Cognition*, Moscow, 1972 (in Russian).
[9] See V. Sadovsky, "Logico-Methodological Analysis of von Bertalanffy's 'General System Theory'", *Problems of the Methodology of Systems Research*, Moscow, 1970, 441-442 (in Russian).
[10] See M. Setrov, *The Organisation of Biosystems*, Leningrad, 1971; A. Takhtajan, "Tektology: Its History and Problems", *Systems Research, Yearbook for 1971*, Moscow, 1972 (both in Russian).
[11] See N. Belov,"The Doctrine of Internal Secretion in Organs and Tissues, and Its Significance in Present-day Biology", *Novoye v meditsine*, 1911, Issue 22, pp. 1228-1236.
[12] See A. Malinovsky, "Types of Biological Controlling Systems and Their Adaptive Significance", *Problemy kibernetiki*, No. 4, 1960.
[13] See L. Petrushenko, "The Conception of Parallel-Intersecting Interaction (the Law of Closed Spaces) and the Philosophical Views of the Russian Physiologist N. A. Belov", *Organisation and Management*, Moscow, 1968 (in Russian).
[14] N. Belov, op. cit., p. 1235.
[15] L. Petrushenko, op. cit., p. 183.
[16] N. Belov, op. cit., p. 1233.
[17] L. Petrushenko, op. cit., p. 184.
[18] See I. Shafranovsky, *Evgraph Stepanovich Fyodorov*, Moscow-Leningrad, 1963 (in Russian).
[19] See Ya. Kumok, *Evgraph Fyodorov*, Moscow, 1971 (in Russian).
[20] See A. Takhtajan, op. cit.
[21] E. Fyodorov, "Perfectionism", *Transactions of the St. Petersburg Biological Laboratory*, St. Petersburg, 1906, Vol. VIII (1), Vol. VII (2), Vol. VIII (1), p. 40 (in Russian)
[22] See ibid., p. 25, footnote.
[23] Ibid., p. 46.
[24] See W. Weaver. "Science and Complexity", *American Scientist*, 1948, Vol. 36, No. 4, pp. 536-544.
[25] E. Fyodorov, "Perfectionism", op. cit., Vol. VIII (2), p. 65.
[26] E. Fyodorov, "Nature and Man", *Priroda*, 1917, No. 4, pp. 423, 425.
[27] See G. Gruzintsev, "Essays on the Theory of Science", *Transactions of the Dniepropetrovsk Institute of Public Education*, Vol. II, Dniepropetrovsk, 1928 (in Ukrainian).
[28] See ibid., p. 271.
[29] Ibidem.
[30] Ibid., p. 291.
[31] See ibid., p. 272.
[32] See ibid., p. 273.
[33] Ibid., p. 272.
[34] See ibid., p. 285.

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The Origins of Man and Society

IGOR ANDREYEV

A profound internal dialectic is latent in mankind's cognition of its own origins. On the one hand, the modern epoch makes it ever more possible for science to delve in ever greater detail and circumstance into the contradictory substance of the process of anthroposociogenesis. On the other, the ever more adequate knowledge of the regularities governing the origination of society helps to make a deeper analysis of the motive forces and tendencies in its development at the present stage, and also of mankind's historical perspectives.

The substance of man, the balance between the biological and the social elements in his life and activity, the social nature of labour and its role in mankind's origination, the tendencies and prospects of the relationship between society and nature, all these are problems which have been and remain highly meaningful in scientific and ideological terms.

It was Engels who set forth the basic principles of the Marxist conception of the origins of man and society in his work, *The Part Played by Labour in the Transition from Ape to Man*. Engels creatively elaborated the idea, which we find in Marx's *Capital* that the social significance of labour is not confined to the transformation of the environment. Labour has, objectively, determined the changes taking place in man himself, the subject of labour, and also in the whole structure of the relationships between individuals. Engels produced a specimen of the application of the dialectico-materialist methodology to the elaboration of the key problem of the beginnings of human history. At the same time, his work is still meaningful for the purpose of criticising idealistic, metaphysical, and biologising

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conceptions which distort man's true substance and the development of society.

Engels's concern with the origins of man and society largely sprang from the scientific discoveries in biology and the ideological struggle which they sparked off. Darwin's demonstration of the animal origins of man had a revolutionising effect on scientific and ideological conceptions in the mid-19th century. There arose the question of drawing a line between the animal and the social world, and establishing the nature of the connection between them and the possible transitional forms. But the prevalence of theological, idealistic and metaphysical views among scientists in that period deprived science of any reliable methodological basis that was necessary for any objective analysis of such intricate and largely unexpected problems. Even forward-looking scientists seeking to gain an objective cognition of the regularities of nature did not quite escape various fundamental errors. Some tended to absolutise the direct impact of the external environment on the organism, regarding the development of the animal world as being rigidly determined by the surrounding conditions. Others, on the contrary, tended to exaggerate the role of instincts and behavioural reflexes in the life of the higher animals. Both extremes allowed for the existence of some non-material, extra-natural force as a source of the supreme purpose. At this point, teleology coalesced with theology.

Darwin succeeded in overcoming Lamarck's straightforward determinism and brilliantly resolved the biological aspect of the problem. He proved that natural selection was the motive force in the progressive evolution of the animal world. But being a natural scientist, Darwin concentrated on the biological problems of anthropogenesis, ignoring the role in it of labour as a specific social attitude to nature and the regularities governing the formation of society. In addition, when considering purely biological matters he tended to exaggerate the importance of the sexual aspect of natural selection, while producing brilliant ideas that were subsequently borne out by genetics. Thus, Darwin believed that favourable features tend to be fixed in the course of evolution through coalescence with external changes attracting the attention of members of the opposite sex. Besides, he did not succeed in duly appreciating the deep-going qualitative gap between the animal's instinctive "mind" and the human intellect, believing the difference to be one of pure quantity.

Engels undoubtedly has the honour of producing a scientific elaboration of the social aspect of man's origin. He was the first to show that the formation of man and society amounted to a dialectical interaction between two sides of a single process. Engels's approach in principle ruled out any idealistic mystification of the process and its explanation as being a product of some extra-natural, non-material forces. But it also rejected the other extreme, namely, the vulgar materialist attempts to explain anthroposociogenesis chiefly as resulting from a happy combination of ecological processes and also to derive social regularities directly from the entrails of the animal world. It would be wrong, therefore, to confine Engels's contribution

here to his having made a mere addition to Darwin's conception of anthropogenesis in a thoroughly detailed theory of sociogenesis. The objective interconnection between the two aspects of the single process led to the fact that his exposition of the social aspect of the problem helped Engels substantially to specify many elements of anthropogenesis, and in particular to overcome some of Darwinism's limitations in the concrete historical form in which it was formulated by Darwin himself.

Engels's labour theory of anthroposociogenesis included the achievements of Darwinism stripped of their biologising extraneous features. The point is that it is these extraneous features together with the elements of Darwin's idealistic approach to social life that subsequently provided the grounds for theoretical speculations by social Darwinists, eugenicists, behaviourists, holists, and so on.

Even today, many Western ideologists try to present the defects objectively inherent in bourgeois society (the arbitrary acts of capitalists, property-holders, the sway of bureaucratic officials, aggressiveness and militarism, racism and fascism, rivalry and individualism) as being immanent in the mentality of the individual, as a part of mankind's make-up, allegedly stemming from the animal world. This helps to obscure the social origins and the historically transient character of these defects. For the same purpose, they will now and again declare that man's formative period is far from complete, and set him up as an isolated individual instead of a social being. While Freud held that man was an animal fettered with culture, the Austrian ethologist K. Lorentz insists that modern man is no more than an intermediate link between the animal and man proper. Another extreme is expressed in the writings of the US sociologist R. Ardrey, who has revived a kind of social Darwinism, by artificially socialising relations in the animal world, seeking out in it classes, property and aggression. In other words, either bourgeois society's social relations are imposed on certain phenomena in the animal world, or the biological regularities of the animal world are regarded as being pivotal to social relations and as providing the motive forces for social development. Each of these trends distorts man's social nature and the biological substance of the animal world.

Let us note in this connection that when taking issue with the methodologically similar biologising and sociologising views, Engels directed the edge of his scientific theory both against the ideological myth about the poor individual savages who subsequently decided to get together and form a society, and against the vulgar nature-philosophy idea about man's having borrowed the social element from the animal world.

In the light of the Marxist conception, it is not some idealistic miracle of creation or a purely biological selection but labour with the dialectical unity of its material and spiritual elements, constituting "the prime basic condition for all human existence", that emerges as the bond between anthropogenesis and sociogenesis.[1] In what sense is it possible to regard man as being a product of labour if labour, according to Engels, took shape in the processes of an-

throposociogenesis? Having made a materialist analysis of the genetic bond between man and the animal world, which Darwin indicated, Engels elaborated the idea that labour had its origins in the specific forms of the biological adaptation of the higher anthropoids to the environment. The latter's vital activity could be ensured through the evolutionary improvement of their natural organs of labour in the development of habits of manipulating the various objects, which for its part was determined by the corresponding morphological organisation and a sufficiently flexible nervous system. This kind of activity could rise to the level of biological specialisation of the species, without producing any narrow specialisation of the natural organs of labour.

The fact that anthropoid apes used sticks, stones and fruit enabled Engels to recreate the way at the beginning of the casual and then of the systematic use of various natural objects to provide for their vital activity. The advantages of instrumental activity as a form of initial biological specialisation were most clearly expressed in the natural succession of the passive and mostly individual gathering of food, which gave way to active group hunting for small game and large animals. This kind of hunting helped emergent men to give up vegetable food and switch to the consumption of meat, which creates more favourable chemical and physiological premises for more intense development of the brain. At the same time, hunting, being an activity involving the systematic use of instruments and a division of functions among its participants, also helped to develop the signalling and communicative mechanisms of intercourse, to shape the group consciousness and the self-consciousness of man.

Gradual quantitative changes along this way resulted in a qualitative leap whose ultimate outcome was the creation of artificial implements of labour, that is, the origination of production and of primitive cooperation as the initial cell of its organisation.

That is precisely the origin of the social forms which are proper to man. This is a break in the continuity of development, a qualitative leap marking a line in this process which allows us to consider the preceding and the subsequent stages of anthroposociogenesis as man's natural birth in the course of biological evolution and man's self-origination as a result of his own material activity.

The founders of Marxism did not confine themselves to analysing the visible and concretely tangible aspect of labour, and went on to show that it is a process in which not only nature but man himself, the subject of labour, and social relations are modified. This enabled Engels to bring out the deeply embedded feedback mechanism of the biological-morphological organisation, the material activity in the transformation of external nature and the communicative and informational structure of human intercourse.

Engels's work, *The Part Played by Labour in the Transition from Ape to Man*, offers a striking example of generalised analysis and an encyclopaedically coherent view of anthroposociogenesis in the dialectical unity of its tendencies, stages and specific contradictions inherent in it. In studying the problem of man's and mankind's

origination, Engels made full use of the heuristic power of the dialectical method.

He showed that the process of anthroposociogenesis developed along two contradictory lines: the immediate biological adaptation to the environment, and the social transformation of the latter by means of the instruments of labour. The interaction between these two contradictory tendencies characterised the inherent integrity of the process of anthroposociogenesis, each of whose natural stages has its own specific structure of contradictions, way of their resolution and transition to a new stage of development or return to the old stage.

Engels considered the immanent property of matter for self-motion, for self-development as the basic cause of man's origination in society, of the transition from the biological form of the motion of matter to the social form. This approach entailed an analysis above all of the internal contradictions of the biological form of the motion of matter itself. He connected the tendency for transition to a higher stage of organisation not with the whole biological form of the motion of matter, but only with that part of it which was most developed and promising in evolutionary terms, namely, the terrestrial anthropoids of the Tertiary Period.

The origination and formation of social regularities which were determined by the development of the instrumental-communicative activity and adequate psycho-physiological organisation of individuals were pivotal to the progressive evolution of the primates towards the higher form of the motion of matter. One of the consequences of this process was the displacement of the purely biological attitude of men to their environment and to each other, notably the egocentrism and zoological individualism which were inherent in the behaviour of the higher apes. The struggle of these tendencies constituted the basis of anthroposociogenesis as a protracted epoch in the formation of man and society. The sharp change in the regime of vital activity among the higher anthropoids in the Tertiary Period under the impact of ecological processes led to structural changes in their morphological organisation. It is the accumulation and consolidation in the course of progressive evolution of the ability for purposeful manipulation of inorganic objects designed to change the environment that created the premises for the qualitatively new stage in the development of the animal world, opening up the possibility for transition beyond its boundaries. In this way, one variant of biological adaptation produced in the specific ecological conditions the beginnings of a new stage of progressive evolution. For its part, each new stage of anthroposociogenesis produced a specific range of variants of the emergent types of vital activity.

It is the dialectical interconnection of the quantitative and the qualitative, the accidental and the necessary, the external and the internal, the mutational and the hereditary factors that provides the materialist explanation of the substance of anthroposociogenesis. It has not been straightforward, smooth or unconditionally progressive, for there have been evolutionary dead ends, movements in reverse, explosive spurts forward and the extinction of whole populations. As

the process of anthroposociogenesis advanced, ever greater importance within it attached not so much to the natural selection of individuals (as Darwin had assumed) as to the peculiar competition among well-knit herds and progressive anthropoid populations. The latter represented various stages and variants of evolutionary development, frequently interacting with each other (ranging from interbreeding to mutual destruction). On the whole, the tree of this evolution can now be traced only in the most general outline. Science has established that the Australopithecus, who used to kill apes in his habitat, was ousted by the Pithecanthropos, who was himself forced to cede his ecological niches to the Neanderthal man. For several thousands of years, the latter had to coexist with the Cromagnon man who subsequently became Homo's sole representative on the Earth.

What then are the chronological limits of anthroposociogenesis? Contemporary scientists date man's origins over a very broad spectrum of time, from 2.5-3 million years (L. Leakey) to 20,000-25,000 years ago (B. Porshnev). Anthropologists, archaeologists, physiologists, psychologists, ethnographers, historians and philosophers frequently adopt different systems of reference, but the difference of approach is not the main thing. This vast gap between the dates is due above all to the fact that it covers virtually the whole process of anthroposociogenesis. This is, in effect, a dialectical view of the transition itself, the consideration of the dialectic of continuity and discreteness in the development of man and society. The methodological idea which runs right through Engels's above-mentioned work — the interconnection between the basic forms of the motion of matter and the inclusion of the lower forms within the higher, without being reducible to the rest — organically fits into the great philosophical conception which he set forth in his *Dialectics of Nature*.

Between the period in which the fossil anthropoids straightened out into an erect posture and began to wield stones, and the period in which man "finally" took shape lay a vast historical period in which the former was transformed into the latter. The emergence of man and society is not an instant act, not a line or leap across a chasm separating the animal world from society, but a drawn out, contradictory and dramatic process. That is why it is impossible to give any precise date for man's origin. The only thing that can be done is to set a chronological framework for anthroposociogenesis and to mark out its basic stages and inherent regularities.

In the analysis of the genetic structure of the process Engels's idea about the existence in the distant past of transitional beings as a peculiar link and a boundary between the animal and the social world is of exceptional importance. He held that the stage of separation from the animal world was logically connected with the development of our simian ancestors, who were "gregarious" and the stage of the completion of anthroposociogenesis, with the further evolution of "men in the making".[2] Engels's idea about the inevitable bifurcation of the leap from the animal world to society, and about a hypothetical transitional stage became the basis for the conception of two leaps in

the process of anthroposociogenesis, which has been elaborated in detail by Soviet scientists (V. Alekseyev, Yu. Bromley, A. Pershitz, Ya. Roginsky, Yu. Semyonov, and A. Spirkin, among others). The first leap was separation from the animal state and the formation of transitional beings with their peculiar type of instrumental vital activity, the primitive herd as a form of self-organisation, and lalia (monosyllabic exclamations constituting a transitional stage from the "language" of animals to articulate speech) as a means of vocal communication. The second leap was the formation of Homo Sapiens proper and society, and the establishment of social regularities.

The rapid development of science today, the emergence of new areas and methods of research, facts and hypotheses result in some fragmentation and separation of the various aspects and facets of the problem of anthroposociogenesis. This regularity in the development of scientific knowledge makes it ever more important to generalise and integrate them on a higher theoretical level and enhances the role of the philosophical comprehension of the regularities that have been discovered and the frequently mutually exclusive hypothetical constructions concerning the origins of man and society. In this context, the methodological importance of Engels's above-mentioned work is as great today as it was when it was written.

Engels did not merely sum up the data then available in the special fields of science. He developed a theory reflecting the contradictory and dialectically interconnected tendencies, stages, and components of the process of anthroposociogenesis, which not only assimilated a mass of concrete information but also rose over and above it, helping to erect logical bridges over the inevitable fragmentation and contradictoriness of the available data. The methodological coherence of the Marxist theory of anthroposociogenesis opens up the possibility of virtually boundless assimilation of the steady stream of discoveries, suggestions and facts, and for the substitution of more up-to-date facts for obsolete ones.

One aspect of this coherence is the dialectical interconnection between the various aspects of anthroposociogenesis: ecological (environmental), anthropological (anatomo-morphological) and social.

The correlation between these aspects will be seen at the various levels: functional, structural and genetic. The important thing to note is that the connecting link between the ecological and anatomo-physiological processes is provided mainly by the vital activity of the higher anthropoids, while the emergent labour activity provides the sphere in which the anthropological and social regularities interact.

The most intimate dialectical interconnection between the history of mankind and the history of the Earth provides the methodological pivot for analysing the ecological aspect of the problem. Science in our day has given more precision to the repeated changes in the Earth's climate and the various regions between the Tertiary and the Quaternary periods, of which Engels was aware, and has produced over the past few years a mass of new data characterising the ecological conditions in which the process of anthroposociogenesis

emerged and went forward. It has been discovered that over the past four and a half million years the Earth's magnetic poles have changed at least four times. The fissures in the Earth's crust in East and South Africa some three-five million years ago revealed outcroppings of uranium ores, so sharply raising the radiation level of the habitat of the fossil anthropoids in the area. A combination of these factors undoubtedly helped to advance the powerful mutation processes and to modify the hereditary course of fossil hominid forms. A recombination of the genofund may have been one of the main lines of a radical biological restructuring. Modern genetics has established a natural reduction in the number of chromosomes in the process of evolution of primates and hominids: from 54-78 among the lower apes, to 48 among the higher anthropoids, and to 46 in man. One hypothesis holds that chromosomes tended to fuse, thereby reinforcing those of them which determined the development of the brain and the nervous system. One could also allow that the functional differentiation of the cerebral hemispheres of the brain has its origins in the above-mentioned rearrangement of the genetic structure of hominids.

All of this is still too obscure and contradictory for any definite conclusions, but it would apparently be wrong to try to reduce the logic of anthroposociogenesis to the genetic mechanisms of heredity and mutation, to say nothing of discovering in genetics the roots of determination of subsequent social development, and not only of men's social behaviour, but even of their class membership, as the British geneticist C. Darlington has tried to do.

Concerning heredity, the mechanism of natural selection and of the prevalent reproduction of the organic forms best adapted to the existing environment in principle tends to operate with some delay, and in that sense is a reflection of what might be called the yesterday of the environment, its history. By contrast, mutations seem to provide in advance a definite stock of new biological traits which appear to be oriented upon the unknown future, rather than being connected with the past experience built into the chromosomes. Mutations are not some kind of miracle or an absolute of chance, for they have a definite range of correspondence between organic forms and the environment, transition beyond whose boundaries leads to the destruction of the mutants. The operation of the genetic mechanisms of selection lies in the verification of the efficiency and viability of the new traits in the conditions of the existing environment, and also in their specific efforts to fit within the tendencies of its change. Consequently, heredity and mutations are interrelated as tendencies of necessity and chance in the development of organic forms.

The idea that there is a profound interconnection between the history of the Earth and the history of mankind can be considered from various angles. While the anthropologists tend to accent (as Engels had done) the analysis of the turning points, the breaks and the ramifications of the process of anthroposociogenesis under the impact of ecological changes and the incipient instrumental-communicative activity,[3] the physiologists (P. Anokhin, F. Ata-Muradova and others)

assume an anatomical inclusion of the vital activity of the developing organic forms of the Earth within the concrete natural conditions. The latter are classified as constant (light, gravitation, the composition of the atmosphere, and so on) and variable (the seasons, the climate, and so on) to which structural and functional systems of provision for vital activity correspond in the course of evolution.

The anatomo-physiological or anthropological consideration of the problem of the origin of man and society is now based on the principle, which has been generally accepted in world science, of the "hominid triad" which was, in effect, first suggested by Engels. The essence of the principle is that at various stages of anthroposociogenesis that element of this triad (erect posture, hands, brain) was improved faster than the others which opened up a new stage in interaction with external nature, fresh opportunities for labour activity and new horizons for social forms.

The first crucial step in the transition from ape to man consisted in the working out, under the impact of the changing natural conditions of the habitat and way of life among the highly developed fossil anthropoids, of the habit for erect walking, which did much to advance the earlier incipient differentiation of the functions among the upper and lower extremities. The erect posture entailed (according to the law of correlated variation discovered by Darwin) corresponding changes in the skeleton, notably the backbone, the structure of the cranium, the foot, the hip-bones, the eyes, the motor centres of the brain and so on. But Engels emphasised, "*the hand had become free* and could henceforth attain ever greater dexterity".[4] This, for its part, helped to improve the erect posture.

The development of the hand as a natural instrument of labour which helped to make a start on the use of other natural and then on the creation of artificial instruments objectively led to the deepening gap between its growing morphological potentialities and the need for a complexified form of active adaptation to the environment as the biological mechanisms of adaptation were weakened.

This gave an impetus to the third stage of anthropogenesis, namely, cephalisation, or the accelerated development of the brain, the shaping of its upper sections and frontal lobes, the substratal basis of generalised thinking and articulate speech, the formation of consciousness and language (speech) as a means of reflection and the ideal instrument for transforming the surrounding world. A comparative study of the artefacts (stones with traces of deliberate change) and endocranial moulds (of the inner part of the cranium) bear out the conclusion that the development of the hand stimulated the improvement of the brain, and that instrumental activity was connected with more intense thinking. On the other hand, "the reaction on labour and speech of the development of the brain and its attendant senses, of the increasing clarity of consciousness, power of abstraction and of judgement, gave both labour and speech an ever-renewed impulse to further development".[5]

Finally, the problem of anthroposociogenesis includes the origins of social forms as proper to the activities of men (above all of labour

activity) and of society as a structure within whose framework this activity is shaped and realised.

The idea expressed by Engels, that the fossil forms of the higher anthropoids were gregarious animals, which is why "it is obviously impossible to seek the derivation of man, the most social of all animals, from non-gregarious immediate ancestors",[6] is confirmed by modern scientific data. The Dutch researcher L. Balk has proved that in structure man is more akin to the embryo of the anthropoid ape than to the adult ape. The retardation, or a specific rejuvenation of man in the process of evolution, means that man is born without waiting for the stage of biological specialisation. This shows that man originated from forms of the higher anthropoids which were much earlier and more plastic than those of present-day apes.

There is no consensus among scientists about why that is so. Some accentuate the ecological determination of mutogenesis in the sapient direction (G. Matyushin), others suggest the hybridisation of various anthropoid groups of populations determined by the sexual taboo taking shape within the primitive herd and the formation of a dual-tribal organisation (Yu. Semyonov). Perhaps the two sources have interacted in restructuring the genofund of the fossil hominids at various stages of anthroposociogenesis, with labour, springing from the instrumental activity of the transitional beings, acting as the bond between the two.

The historically ideal aspect of labour lies in the empirically discovered and then ever more consciously used automatism of some natural processes, in the growing role of purposeful instrumental activity. This inevitably led to the complexification of the succession of conscious labour acts and to the corresponding improvement of the emergent man's intellectual and emotional activity.[7] The objective contradiction between the qualitatively new attitude to nature latent in the development of instrumental activity and the momentum of biological ties and stimuli of behaviour in the intercourse among individuals produced the need of new means for effectively coordinating the activity of various individuals in the group and of the groups themselves.

The primitive herd, substantially differing both from animal herds as such and from primitive social systems, was the form of internal self-organisation of the transitional beings, and its further progressive development was connected with the growing need to provide for internal unity and stability of the emergent collective. It was natural for Engels to assume that "men in the making arrived at the point at which *they had something to say* to each other",[8] that being the main feature of the emergent human beings. This was the signal and communicative function of the dawning consciousness, because alongside the second signal system speech was taking shape as a fundamentally new type of labour instrument. Analysing the psychic mechanisms of suggestion and interdiction (resistance to suggestion), B. Porshnev reached the conclusion that one of the stimuli for the development of the polyphonic human voice was imitation of the interdictory signals of big animals in the absence of any effective

material means of protection against them. This psychic instrument then lost its importance with the taming of animals and the development of material instruments of labour, but had a considerable role to play in the evolution of the human voice and the formation of speech.[9]

Discrete, articulate speech as an external means of conveying and receiving information is addressed to another, and to one's own self, as a form of storing and processing information. Reflection comes on the scene, and has an ever more important part to play in the shaping of thought. Man no longer simply knows, he is aware that he knows. His consciousness reflects not only the external situation but also his own place in it, and his attitude to it. Consciousness, as a social phenomenon, is inconceivable without self-awareness and mental changes of the situation, without an ideal structuring of the future results of labour and practice as a whole.

Indeed, it is the formation of the system of social production and speech, as its universal and inalienable component, that provides the basis for the completion of the protracted transformation of the herd-group structure of intercourse among the transitional beings into the tribal organisation as the primitive social cell. Simultaneously, taboo as a relict mode of social regulation of economic activity and behaviour of members of the collective, was becoming a source of shaping relations of power and property within the framework of the emergent tribal community.

Most Western writers either ignore the role of labour in the process of anthropogenesis (the French philosopher and theologist P. Teilhard de Chardin) or tend to reduce the substance of instrumental activity to an extremely primitive manipulation of material objects, and this also ignores the objectively shaping, even if elusive, mechanisms of their communicative activity and emergent reflection (the British zoologist A. Hardy). Others tend to minimise the role of labour in the shaping of man by identifying it with the instinctive manipulation activity of animals, by denying the progressive evolution of the hand as an organ of labour, and by contrasting with labour other factors of anthroposociogenesis which it determined.

Thus, the well-known US biologist E. Mayr claims that the use of instruments and even their making is widespread in the animal world; that the hand underwent virtually no change at all from the time it was first used to grasp a branch until it was first used to play the piano or repair a fine clockwork; that the fashioning of simple stone instruments was not at all a necessary stimulus for the development of the brain, and so on. He says that it was speech, and not labour, that triggered off the transition from hominid to man.

This kind of antithesis between speech and labour will be found among other Western scientists, including linguists, sociologists, anthropologists, and historians. Thus, the Canadian sociologist M. McLuhan insists that the means and mechanisms of the signal and communicative connection were the crucial determinants of social relations. He sets up this aspect of social activity as an absolute, thereby contrasting the means of communication and the means of

production. The magic of communication tends to obscure the crucial role of material production, one of whose most important components, as a social phenomenon, is the coordination by men of their activity, their social experience, and so on.

Engels showed very well that it was labour that engendered the need for communication through speech as a necessary social premise. For its part, collective labour at the dawn of mankind's existence determined collectivism in other fields of man's vital activity, like consumption, communication, etc. Besides, the latter cannot be reduced to the oral or written transfer of information. In the broad sense, it also covers the repeatedly mediated exchange of activity and the results of material production, while the means of communication cannot at all be reduced to oral speech and writing. Only in the dialectical unity of all these components in the emergence of language and speech does the process of anthroposociogenesis appear as an objective regularity.

Engels's work, *The Part Played by Labour in the Transition from Ape to Man*, which he wrote a century ago, remained unknown in Russia for nearly half the time. Only in the early 1920s was it published in Russian by the Gomelsky Rabochiy Publishers. Soviet anthropological science and the philosophical elaboration of the problem of the origin of man and mankind have rested on the dialectico-materialist doctrine of the Marxist-Leninist classics, and in particular on Engels's above-mentioned work.

The fundamental ideas and methodological principles elaborated by Engels have not only been confirmed and spelled out in detail but also further developed in the writings of Soviet anthropologists, historians and philosophers. Progress in primatology, palaeoecology and palaeophysiology, the appearance of methods and techniques used in the purposeful organisation of archaeological excavations which were unknown a century ago, and new methods of dating fossil relicts and the study of the most ancient stone implements, all this has yielded a mass of new facts which bring out the objectivity, viability and lasting scientific value of the general theory of anthroposociogenesis worked out by Marx's great associate.

NOTES

[1] K. Marx and F. Engels, *Selected Works*, Vol. 3, Moscow, 1970, p. 66.
[2] Ibid., p. 68.
[3] See Yu. Reshetov, *The Nature of the Earth and the Origin of Man*, Moscow, 1966 (in Russian).
[4] K. Marx and F. Engels, *Selected Works*, Vol. 3, p. 67.
[5] Ibid., pp. 69-70.
[6] Ibid., p. 68.
[7] See A. Leontyev, *Problems in the Development of the Psyche*, Moscow, 1972; S. Semyonov, *Labour and Intellect at the Early Stages of Evolution*, Moscow, 1964 (both in Russian).
[8] K. Marx and F. Engels, *Selected Works*, Vol. 3, p. 68.
[9] See B. Porshnev, *On the Beginnings of Human History*, Moscow, 1974, pp. 358-360 (in Russian).

On the Nature of Historical Notions

NIKOLAI SMOLENSKY

Problems connected with the inception and development of historical notions comprise an important area of the logic of historical research, the importance stemming from the cognitive role of scientific notions. The level of concrete historical research depends in great measure on the development of the historian's logical apparatus and the degree of consciousness in his approach to the utilisation, development and enrichment of the logical means at his disposal. Historical notions as a whole comprise a problem still awaiting development. This article will deal with some aspects of the relation between historical notions and historical reality, in which connection the views of a number of present-day Western historians will come in for criticism.

Present-day Western historiography places special emphasis on the fluidity in the content of historical notions, as distinct from what is constant and stable in them. "All general historical notions," writes the West German historian R. Wittram, "contain something that is unstable; they are prone to continual change in their content, and, in most cases, are of only approximate suitability." [1] What he is referring to is not a consideration of historical notions in their development but a relativist interpretation of that development. Yet the scientific nature of historical notions has been borne out by their development: a category that does not modify, specify or develop its content together with the development of reality and knowledge of the latter cannot be scientific. The non-coincidence of notion and reality cannot be considered a shortcoming, not only because that coincidence is inevitable but also because it opens up the road through the development and enrichment of notions.

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The heuristic approach to an appraisal of notions is common to many Western historians: a notion is not an instrument for the cognition of reality (it is at the same time a copy of that reality); it is an auxiliary instrument of cognition, one that is independent of its source. That idea of the nature of historical notions underlies the conception of civilisations held by A. Toynbee, who, writing of cognitive activities that bring a certain array into historial facts, said that our representation of data as a whole remains chaotic until we find a model that gives them the nature of exemplars of a species.[2] Like many other scholars he makes reference to, Toynbee here understands by model a heuristic means of cognition; a model is created on the basis of reality but at the same time is not a reflection of that reality, which it is called upon merely to explain. With that are linked the conventionality, the symbolical character of a model. To him, of course, the question of the number of civilisations in history is immaterial in principle, in his opinion, their number can be increased or reduced without any detriment to the knowledge of the past.

In essence, Toynbee's attitude towards the origin of the historian's conceptual apparatus is reminiscent of the theory of ideal types advanced by Max Weber, to whom he makes reference. Many other historians also view the nature of historical notions through the prism of that theory. The idea that, in essence, the historian chooses the logical premises of research arbitrarily is a general proposition that frequently figures in the writings of Western authors. In his voluminous work on problems of the logic of historical research, in which he engages other historians in a polemic, US researcher D. H. Fischer comes out in defence of the idea that the logic of historical thought and a conscious attitude to that logic are essential. By the logic of historical thought Fischer understands the interlinked structure of an initial logical assumption and the actual knowledge adduced by the historian to substantiate it; that structure is based on the principle of mutual adjustment. Logical assumptions are freely chosen by the historian in keeping with the aim he has set himself. The historian, Fischer writes, must learn to "respect" his freely chosen assumptions: "No man is free from the logic of his own rational assumptions—unless he wishes to be free from rationality itself."[3] From logic as understood by Fischer, genuinely objective logic differs in its hinging, not only on the research being conducted, but first and foremost on the historical reality from which it is deduced.

The divorcement of historical notions from reality also takes place when, for instance, the historian declares his indifference to the particular notional apparatus he has availed himself of.[4] Whatever the wording it is couched in, this divorcement helps deny the objective nature of historical notions and of historical knowledge in general; it is an outcome of subjectivism and relativism.

To the Marxist historian, scientific notions are determined by the object of historical science in the broad sense of the term, and the object of historical research in each particular instance. Every area of research presupposes, in a definite sense, certain particular notions; all phenomena in history cannot be studied with the aid of one and the

same set of notions. We are referring to specifically historical notions, the degree of whose development in a given area of research permits a judgement to be formed of the level of a particular piece of research, and its maturity.

The nature of the notions employed by historians has always depended on their views on the object of historical science. Historical notions always bear upon an historically definite object, therein lies their specificity. This is true both of the object of particular historical research, and the object of any historiographical school and trend. The formation of notions is not a point of departure for a development in the course of which history turns into an independent scientific discipline. That transformation is a result of a differentiation of knowledge as a whole, a differentiation which leads to the emergence of the object of historiography as distinct from the object of other scientific disciplines or forms of an intellectual grasp of reality. It is on that foundation, and simultaneously with it, that there develop methods of cognition and of special scientific notions with the aid of which the object of research can be tackled. An approach to an analysis of historical notions in the evolution of historical science from this point of view will reveal many trends, schools as well as individual historians, whose historiographical practice is marked, if not by a set of definite notions, at least by a definite content and nature.

In the 19th century, German political historiography was linked, in particular, with certain notions distinguishing it from the practice of other national historiographical trends and schools. That historiography was born at a time when the national movement was on the ascendant, and voiced in its own way the interests and needs of that movement. It was a time that induced many German historians to concentrate on political history, thereby influencing in many ways their views on the object of historical science in general. This also determined the significance they attached to such political categories as "state", "policy", and "nation". The German historians' perception of the historical process was grounded, first and foremost, in these interlinked categories, whose content coloured the historical thinking of such historians as Ranke, Mommsen, Droysen, Sybel and Treitschke. The interlink between these categories is also to be seen both in general historical views and in the practice of concrete research. Focal in them was the notion of the State, which was regarded, not as a product of historical development but as its purpose, foundation and motive force, an agent of the historical process. The State, these historians held, is a real embodiment of the national potentials; all nations tend to form States. That was why they applied the category of "nation", like the notion of "State", to all periods of human history, although it is common knowledge that the formation of nations is linked with the capitalist social system.

Therein lies one of the distinctions between political historiography in Germany and in France in the Restoration period (Guizot and Thierry). These French historians advanced a notion of "nation" that was far more complete and replete with content—within the

framework of 19th-century bourgeois historiography. The notion emerged, first and foremost, from their study of French history. In Guizot's opinion, the 10th century was the cradle of the French nation. He held that, in the conditions of the supremacy of feudalism in the country—i.e., from the 11th to the 13th centuries—there was no nation as such in France. Thus, in the logic of Guizot's historical thinking, the notion of "feudalism" (which he identified with the feudal fragmentation of France) precluded the category of "nation", whose development he linked with the activities and growth of the Third Estate. A nation, he thought, is based on a deep-lying unity of the people as the consequence of similarity of institutions, morals, ideas, sentiments and language. National unity, as Guizot saw it, is the foundation of political unity, and not vice versa. The external political unity of the domains ruled by Charlemagne merely covered up a total absence of national unity. This concept of nation determines an approach to a study of history that is already substantially different from that of the German bourgeois historians.

As mentioned above, the notions "State" and "policy" were interlinked in the practice of national political historiography, the historians noting that policies pertain first and foremost to the external activities of the State. To Ranke, policies consisted in the relations between ruling dynasties and the achievement of a system of equilibrium between States. The ideas he developed testified to the importance he attached to the category of the balance of power, which he understood as a most important condition for a State's normal development. To Treitschke, the category of "policy" had a different content: he considered it primarily as an instrument for the achievement of national aims, a means for the national states to win positions in Europe and in the whole world. Such was also the content of this category in the historiography of Sybel, Mommsen, and Droysen. It should also be noted that these historians regarded the notion of "policy" as one of the principal in the totality of categories expressing their understanding of the relationship between historiography and the times.

Another example of the way historical research and its notional apparatus are conditioned by the times is provided by the Russian school of the history of agrarian relations, represented by such names as M. Kovalevsky, P. Vinogradov and I. Luchitsky. A major influence on the evolution of that school was exerted by the Russian pre-Reform and post-Reform scene, with its struggle for the solution of the agrarian question in the country. The research trend set by the times found expression in a definite sum of special historical notions inherent in that trend and also evolved in connection with the demands presented by the study of concrete objects.

Thus historical notions are of dual origin: on the one hand, they stem from the reality, in the broad sense of the word, surrounding the historian; on the other, they are rooted in the features of the given area of research. The dependence of the cognitive role of historical notions on the features of the times is of great importance: there is no doubt that, in choosing the method of cognising the past—this being

always summed up in a definite group of concepts—the historian draws on his own times, not on the past itself.

The progress and development of historical knowledge are linked with the advance of history itself. That is why the way historical notions are determined by the times is an essential condition for their advance. Why is it that the historian is able to reflect the historical past in appropriate notions, and deal with social phenomena which no longer exist and whose properties do not coincide with those of his own times? Historical notions are moulded by actuality, but the latter determines them in such a way that they are at the same time contemporary historical notions, and something else besides. As a constantly developing reality, the present is dialectically linked with the past, being at one and the same time a result and a negation of that past. Therein lies actual development from the past, through the present and into the future. In reflecting this contradictory process of historical development, the scientific historical notions cannot be only a result of the impact of past times on the historian's mind. They are a summary of knowledge of the past through the prism of the present. This also refers to such an initial notion as "historical fact". Of course, herein lies only the overall foundation for the emergence of scientific historical notions, beyond the confines of which the question of the nature of various notions and their epistemological function should be examined concretely. It is beyond doubt that the cognitive role of historical notions and the place each of them holds in their totality, the latter depending on the object of study, are conditioned by the historians' own times, of which the condition of historical research forms a part.

The link between historical notions and their times is also recognised, in their own way, by Western historians. For instance, Hedinger is of the opinion that notions should express the indivisibility of an historical situation into a subject (I) and an object standing opposed to it (the surrounding world).[5] This is an acknowledgement that the historian who employs historical notions is unable to avoid the notional link with his own times. However, the question is how the nature of that link should be understood. It is obvious that any attempt to explain the origin of historical notions on the basis of some variety of a subjectivistically understood thesis of mutual penetration between the object and the subject of cognition is untenable, since it opens up the way to relativism in the interpretation of the nature of historical notions, and leads to a negation of any stable content in them. Apart from the question of how historical notions or systems of notions relate to each other, there also exists the question of how they relate to their own source—the historical reality they must be correlated with. Notions draw their objective content from reality, which is why the criterion of their objectivity and effectiveness lies not within themselves but in the correspondence of the cognitive image to reality itself. Notions are therefore not an *a priori* scheme that can be superimposed on reality.

The link between historical notions and the times is inseparable from their social and class content. Historical notions that are neutral

in the class sense simply do not exist, this being conditioned first and foremost by the social nature of the object of cognition, i.e., historical reality. That is why the establishment by some present-day Western historians of two kinds of notions—those that guide the scholar in his cognitive seekings and those which express his socio-political views in the conditions of his times, is untenable. "Those which motivate my political choice are not of the same order as those which inspire my working hypotheses," Alfred Dubuc has claimed.[6] In the final analysis, cognition of the historical past depends on the selfsame premises that ultimately determine the historian's social stand in contemporary society.

A struggle is in progress among historians of different convictions over the question of the ideological and class content of historical notions. It would be hard today to find a Western historian who will deny the influence of the times, of politics and ideology on the content of historical notions, although the question of the influence of the class struggle is usually played down. Something else should be stressed, namely, that the content of historical notions is reducible to their ideological significance. For example, in addressing himself to the history of the notion of feudalism, O. Brunner sees the change in the content of this notion only as a modification of its ideological and social function.[7] Underlying this view is the contraposition of an historical notion's social function to its objective content.

In fact, no such contradiction exists in a scientific notion, this also being borne out by the experience of the development of Western historiography. For instance, with Guizot and Thierry, the categories "class" and "the class struggle" performed a definite function, being linked with the discussion that began in the 18th century on the historical role played by the Franks and the Gallo-Romans in the history of Europe. Of course, these French historians regarded the class struggle as a struggle between races. This was because the notion of "class" had not been fully developed, and they were thereby expressing their opposition to feudalism and their defence of the interests of the bourgeoisie. Yet it is also obvious that these historians' introduction of the concepts of class and the class struggle was not merely the outcome of ideological differences or the ideological struggle. These notions express the law-governed patterns in the internal links between historical phenomena, this permitting Karl Marx to note that it was not he but the French historians of the Restoration period that had discovered the law of the class struggle in history.[8] The social function of an historical notion becomes manifest if it is examined, not in divorcement from appropriate historiographical practice (inasmuch as historians do not as a rule engage in the structuring of historical notions as such) but in a nexus with that practice, the totality of other notions.

Thus the social function of a scientific historical notion is not a characteristic it can be stripped of in certain conditions. The notion is social in origin, in nature, and, consequently, in content. The indisputable advantage enjoyed by the Marxist historian lies in his logical apparatus expressing not only a quite definite ideology but also

the law-governed patterns in the links between phenomena. To the Marxist historian, notions are steps in the infinite process of the ever fuller and truer cognition of reality. The need to rewrite history stems primarily from the social interests and needs of parties, classes and society as a whole. It would be wrong, however, to think that an historical notion is the more objective, the farther it stands from the social struggle. In the first place, the social is itself objective in the same measure in which historical reality as a whole is objective, and is not, therefore, in this respect some particular object that can engender only the subjective in cognition. In the second place, the role of the social in the history of historical science is a dual one: the social has served, not only as a source of error but also of just as obvious progress in cognition. Each generation of historians has inherited from its precursors, not only social prejudices or their results but also moments of objective truth. Prior to the emergence of Marxist historical science, one form of the social ousted another as obsolete in the advance of historical notion. In pre-Marxist historical thinking, the notion of feudalism, for example, proved most fruitful in the conditions of the social relations of bourgeois society, and not in the conditions of the existence of that social reality itself, i.e., feudal relations. As for the notion the "dictatorship of the proletariat", it is scientific because it most consistently embodies the social advance it has stemmed from.

The social function of a scientific historical notion is expressed through its objective content. This does not contradict many categories of logic in bourgeois historical thinking being not simply an expression of bourgeois relations but at the same time a kind of camouflage of the latter. Thus, with bourgeois objectivists, the category of objectivity is in essence a masked form of their party spirit, although with them such notions operate as mutually excluding one another; with the ideologists of the French bourgeois revolution of the 18th century, as with many later historians, the notions of liberty and equality served to cover up their class stand and so on.

The social nature of historical knowledge as a whole has not prevented Marxist historians from making use of the various results of research conducted by bourgeois historians, but it precludes the utilisation of such results as expressed in the form of notions. For instance, Marxist historians find unacceptable notions which sum up a perception of reality from the viewpoint of the religious world outlook. That is not because such systems of views cannot contain their own inner logic but because they include notions that are opposed to science. In general, one can discern in the history of pre-Marxist historical thinking quite a number of anti-scientific notions (for example, the category of the folk spirit in German Romantic historiography). The Marxist historian also finds unacceptable the notion of history as a science of the spirit, inasmuch as this concept sums up idealistic ideas on the nature of historical science which are based on anti-scientific ideas of history as a whole. But one cannot always see so clear a distinction between the notions of Marxist and bourgeois historiography.

The emergence of the materialist understanding of history was linked with the introduction of new and fundamental categories that were a revolution in the views on society contained, in particular, also in historiography. However, the materialist understanding of history did not reject all of the notional apparatus that had existed in the latter. Thus, a number of special historical notions, for example, those of the community, patrimonial estate, Hellenism and the unified monarchy resting on estates, which are extensively used by Marxist historians have in effect been given a new content as against their connotation in pre-Marxist historiography. Naturally, the founders of the materialist understanding of history could not have been expected, not only to formulate the main propositions of that understanding of history but to draw up a system of special scientific concepts to register historical knowledge in respect of various periods and social systems. In volume, nature and content, that could have resulted from the special research conducted by a large number of scholars. However, Karl Marx and Frederick Engels did provide examples of such specialised study. That was exemplified, first and foremost, in Marx's *Capital,* which contains, not only dialectic as integrated in the texture of a single science—that of political economy—but also a system of special scientific notions that have given concrete expression to the fundamental propositions of the materialist understanding of history as applied to an analysis of the capitalist mode of production.

The notion of socio-economic formation is a category essential for a scientific explanation of the historical process. The elaboration of this and other categories of historical materialism, as well as their concrete application to historical knowledge, is one of the main trends in the logic of historical research. The enrichment of historical notions and the appearance of new ones do not proceed independently of the categories of historical materialism but are the outcome of their application to the study of history. That is how special historical notions appear in all areas of historical knowledge. The materialist understanding of history provides the scholar with a system of general abstract scientific notions that are necessary for selecting and analysing facts, and for getting an objective picture of historical development.

Such categories of historical materialism as mode of production, productive forces, production relations, socio-economic formation, the class struggle, revolution and the like are cognitive instruments important to the historian both directly and through the totality of special historical notions. As less general abstractions, these notions give concrete shape to the categories of materialist dialectics as applied to historical knowledge in each of its areas. The development of a system of such notions also precludes the vulgar sociologisation and schematism that Marx and Engels came out against in their criticism of those who regarded the propositions of the materialist understanding of history as a means of evading its study.[9]

Of course, special historical notions should be linked with a system of newly acquired knowledge, and not be simply arrived at

deductively. "The endeavour to look for answers to concrete questions in the simple logical development of the general truth ..., Lenin wrote, "is a vulgarisation of Marxism and downright mockery of dialectical materialism."[10] While the most general links and features of reality are registered in the categories of the materialist understanding of history, special historical notions stand closer, as a rule, to that reality, reflecting its various aspects, or features of a definite totality of phenomena. These notions are immediately linked with the historian's research principles and his working hypotheses.

Any historical notion is in the first place a term, a word or a group of words, although not each and every term can operate as a notion, i.e., a scientific abstraction that contains general and essential features of a definite sum of phenomena. Language is the prime means of reflecting the objective content of reality in terms of thought images: the history of words, terms and notions is, in certain measure, a reflection of the history of events. No impassable line of division runs between terms and special historical notions. Many instances could be quoted of terms contained in historical sources acquiring full content and becoming accepted and imbued with methodological significance in historians' writings. Of course, there also exist notions that are not semantically linked with historical sources but are used in respect of periods that did not know their use, such as the "Middle Ages", "civilisation" and so on. On the whole, however, the history of words often comes to the assistance of the history of notions. The emergence of historical science as a separate discipline has always found terminological expression, since such terms as *ars* and *Kunst* denoted both science and art in the Middle Ages and ensuing times up to the 19th century.

A situation in which the historian studying a particular period uses notions that were unknown during that period is often to be met in science, a circumstance that is frequently used in present-day Western historiography for a denial of the objective nature of historical notions. In reality, however, an understanding of a period in terms of appropriate scientific notions does not depend on whether that period possessed a particular term for its denotation. A scientific historical notion never confines itself to any particular enterpretation of what that period thinks of itself, i.e., to the content of the terms in question. This does not, of course, mean that such terms contain no objective content and should not be studied. For instance, the notion "freedom" in barbarian codes, and the category "time" in the Middle Ages were undoubtedly objective but confined to a definite historical framework.

The language of historical terms and notions confronts the researcher with the task of taking account of their specific content in each particular period, and the development of that content. Due account of the historical, and therefore changing, content of terms and notions in historical sources is an indispensable condition of scientific historism in understanding and appraising social phenomena. The long-established link between changes in social relations and in language can lead to an understanding of those relations. A word

cannot be looked upon as a key to an understanding of events, but in many cases of unclear terms that understanding cannot be achieved without a preliminary study of the content of those terms. Terminological analysis is of particular importance in respect of sources of antiquity and mediaeval times. The content and meaning of many terms referring to those times are far less clear to the present-day researcher than the language of his own days or recent times, yet the solution of many concrete historical problems of principle often hinges upon the interpretation of various terms. Thus, in his analysis of the history of the peasantry in Russia, Academician B. Grekov wrote, that it was necessary to ascertain which terms in the written heritage passed down to us designated the tiller of the soil and which were used in the various sources to indicate the various strata in the mass of the people whose labour fed a vast country. The conclusions arrived at by the researcher, he said, depend on some particular interpretation of terms.[11]

In his work on terms contained in historical sources, the researcher often comes up against a variety of meanings in them or with the existence of several terms to denote one and the same phenomena. Besides terms may be archaic. In instances when a term used in a source becomes an historical notion imbued with a specific content, the researcher does not, as a rule, limit himself to the meaning of the term in the context of the source in question but tries to establish its genuine content. In respect of the emergence of a new historical notion, terminological analysis as a whole is the first step in the process of abstraction.

The accumulation of fresh historical facts and the overall advance of historical knowledge provide the foundation for the development of historical notions possessing varying degrees of common content. The historian uses both individual and general historical notions, both of which are essential to him. The individual nature of phenomena can reflect not only an individual but also a general notion. The latter is the result of thought, of abstraction but the historian can discover the general in historical reality: like what is individual, it is inherent in all historical events. With the aid of notions, the general in the first place, the historian's thinking departs from reality so as to be able to reproduce it with greater completeness and depth. Individual concrete historical notions also serve as an instrument for the reproduction of the actual development of events.

A cognitive image created by the historian is a unity of the general and the individual, a unity of a fact and its generalisation as well as a unity of general and individual historical notions. In that image, the general exists in the form of the particular and the singular, which is why such a notion in a scientifically cognitive image cannot be divorced from fact. The development of historical notions enhances the closeness of the cognitive image to reality itself. An historical notion is not immediate reality and has not been deduced from the latter as a simple arithmetical sum of events. "But what would old Hegel say," Karl Marx wrote, "if he heard in the next world that *das Allgemeine* in German and Norse means nothing but the common

land, and *das Sundre, Besondre*—nothing but the separate property divided off from the common land? So the logical categories are coming damn well out of our 'intercourse' after all."[12]

The gap between an historical notion and reality is also marked by the fact that our idea of a reality which has achieved mature development is transformed into a notion as a scientific abstraction. Consequently, it does not register the origins of that reality. This contradiction between a notion and reality is eliminated in the course of the historical mode of research and the ensuing cognitive image. Particular difficulties arise in an analysis of transitory historical forms which can be understood neither with the sole aid of notions that sum up what is old and outmoded, nor with the sole aid of a notion that reflects what is new and nascent.

Of great importance for understanding the nature of historical notions is the question of how a particular notion correlates with different variants of a single class of phenomena. Historiographical practice, says Th. Schieder, the contemporary West German historian, "operates with general notions and postulates patterns which are merely moulded after the model of outstanding and unique historical events, the latter being then elevated to the degree of a type. It may be said that most of the notions used in historical science have arisen in this way, and not through methodological research."[13]

Toynbee's ideas are also marked by this normativeness. "...At least one complete specimen of the history of civilisation is a necessary first piece of material evidence for a study of the species"[14]; "The history of this Hellenic Civilisation was a complete specimen of its kind... till I struck the latter."[15] Toynbee chose Hellenic civilisation because it seemed to him the most complete, possessing a distinct chronological framework and being the best studied. According to Toynbee, "a comparative study of a number of specimens means noting their likenesses and differences with a view to discovering whether or not there is a standard type to which they conform, notwithstanding their individual peculiarities".[16]

An attitude to an historical notion as a kind a stereotype is, in our opinion, incompatible with a scientific understanding of its nature. In his research, the historian should take account of and analyse a definite sum of variants in the development of events, for otherwise he will be unable to determine those which of them are outstanding. If we are speaking not of a scientific notion that has taken shape and is at hand but of the inception and development of that notion in the process of historical research, then the road towards that notion lies through an analysis of a sum of phenomena of one and the same order; that will help establish those features that are essential, and not fortuituous.

Engels regarded scientific notions, abstractions, as "*abbreviations* in which we comprehend many different sensuously perceptible things according to their common properties".[17] This also refers fully to the appearance of historical notions resulting from the historian's synthetic thinking, the generalisations he arrives at in the course of his research. Thus, the research into method, which Schieder seems to

have considered superfluous, is essential also because the concrete nature of history as a science precludes a rejection of the study of a variant of reality which the historian may find non-typical.

All this, however, does not obviate a most essential feature of the process of generalisation in historical science, and consequently the formation of notions in it. This feature is linked with the nature of the repetitiveness of social phenomena: any historical situation is concrete so that, given absolutely identical conditions, repetitiveness is precluded.

Repetitiveness—similarity in the essence of social phenomena—is primarily an outcome of varying degrees in their development, this being determined by the concrete historical conditions in a given situation or period. It is proper to speak of differing degrees of development and maturity in phenomena of the same order; the choice of more or less mature variants of reality should obviously be based not on a certain extra-historical scale or their qualification according to the principle of "departure from the norm" or the contraposition of "prime and secondary importance", but through the establishment and rigorous weighing of their concretely historical features and their place in historical development. The repetitiveness of historical reality of different degrees of maturity can take place both within a single historical period and within different periods. In that sense, one can speak of different (i.e., depending on concrete historical conditions) variants of feudalism, forms of absolutism, types of bourgeois revolutions and so on.

Highly indicative is Lenin's attitude towards the French bourgeois revolution of the end of the 18th century in connection with the question of its role in the ensuing bourgeois transformations. "It did so much," he wrote, "for the class that it served, for the bourgeoisie, that it left its imprint on the entire 19th century, the century which gave civilisation and culture to the whole of mankind. The great French revolutionaries served the interests of the bourgeoisie, although they did not realise it, for their vision was obscured by the words 'liberty, equality and fraternity'; in the 19th century, however, what they had begun was continued, carried out piecemeal and finished in all parts of the world."[18]

In respect of all ensuing bourgeois transformations, including the form of 19th-century bourgeois revolutions in Western Europe, the French Revolution was undoubtedly the supreme and most mature form of historical reality. Consequently, the notion of "bourgeois revolution of the epoch of capitalism" will be most complete if it is cast in the mould of this particular mature form of historical reality.

One can understand the place and historical significance of its other forms if one takes a mature historical reality as a point of departure. To understand how the capitalist mode of production emerged, it was sufficient for Karl Marx to study England, a country where the process of the so-called primary accumulation of capital was the most intense.

Historical reality can obviously be studied with the greatest ease where the essence of phenomena finds its most distinct expression. In

this sense it was not fortuitous that the category of "class struggle" was brought forward by French historians of the Restoration period, on the basis of French history. "France," Engels wrote, "is the land where, more than anywhere else, the historical class struggles were each time fought out to a decision, and where, consequently, the changing political forms within which they move and in which their results are summarised have been stamped in the sharpest outlines. The centre of feudalism in the Middle Ages, the model country of unified monarchy, resting on estates, since the Renaissance, France demolished feudalism in the Great Revolution and established the unalloyed rule of the bourgeoisie in a classical purity unequalled by any other European land."[19]

Thus, at a definite stage of historical research or the development of historical knowledge as a whole, a mature historical reality operates as the foundation of an historical notion. That, however, does not mean that a mature historical reality is the sole source of a notion. The notion of feudalism, Engels wrote, was nowhere in full accord with its reality.[20] We associate the notion of a mature historical reality with a stage of development in historical research at which the latter discovers the most developed form of historical phenomena and, on that basis, arrives at a unity of empirical research and generalisation. As a result, no singular historical notions exist that are devoid of a general content. On the other hand, this also cautions us against a divorcement of an historical notion from the concrete historical material of the times, the essential features of which are registered in that notion. The notions of historical science, like the categories of historical materialism, constitute a unity of the abstract and concrete, the general and the singular. They emerge from the experience of history, so that a notion cannot arise before the necessary historical conditions have matured.

A classical example is provided by the development by Marx, Engels and Lenin of the notion of proletarian dictatorship. The *Poverty of Philosophy* and the *Communist Manifesto* only pose the question of the proletariat's need of a state. In the *Communist Manifesto*, the idea of the dictatorship of the proletariat is expressed as follows: the organisation of the proletariat in ruling class.[21] Is the establishment of proletarian dictatorship possible without the preliminary destruction of the bourgeois state? The reply to this question (which the *Communist Manifesto* led up to) was given in connection with the experience of the 1848 Revolution: in his *The Eighteenth Brumaire of Louis Bonaparte*, Marx wrote of the task of dismantling the bourgeois state. The form of the proletarian state to replace the bourgeois one was prompted to Marx by the experience of the Paris Commune. And finally, in the new historical situation that developed in Russia following the Great October Socialist Revolution, Lenin saw the Paris Commune as the prototype of Soviets, the first step in the development of the dictatorship of the proletariat. In this sense, the development of historical notions is furthered, not simply by advances in historical knowledge and in a knowledge of society as a whole, but also by historical development. One cannot but see in this

an essential feature of the formation of historical notions in comparison with the categories of knowledge in the natural sciences.

Thus, the inception and development of historical notions are based on the general and law-governed patterns in the development of historical knowledge as a whole and, ultimately, in the patterns of the development of the historical process itself. These patterns have been fully reflected in historical materialism whose categories provide the theoretical premise for the development and enrichment of the Marxist historian's notional apparatus. The categories of historical science, like those of historical materialism, are a unity of the general and the singular, the abstract and the concrete; the objective content of those categories in no way contradicts their social and class content, or their social function.

NOTES

[1] R. Wittram, *Das Interesse an der Geschichte*, Göttingen, 1958, p. 43

[2] See A. Toynbee, *A Study of History*, Vol. XII, London-New York-Toronto, 1961, p. 166.

[3] D. H. Fischer, *Historians' Fallacies. Toward a Logic of Historical Thought*, London, 1971, p. XV-XVI.

[4] See W. O. Aydelotte, "Notes on the Problem of Historical Generalisation", *Generalisation in the Writing of History*, Chicago, 1963, p. 155.

[5] See H. W. Hedinger, *Subjectivität und Geschichtswissenschaft*, West Berlin, 1969, p. 175.

[6] A. Dubuc, "L'histoire au correfour des sciences humaines", *Transactions of the 13th International Congress of Historical Sciences*, Moscow, 1973, Vol. I, Part 1, p. 154.

[7] See O. Brunner, *'Feodalismus'. Ein Beitrag zur Begriffsgeschichte*: O. Brunner. *Neue Wege der Verfassungs- und Sozialgeschichte*, Göttingen, 1968.

[8] See K. Marx and F. Engels, *Selected Correspondence*, Moscow, 1955, p. 85-87.

[9] Ibid., p. 496.

[10] V. I. Lenin, *Collected Works*, Moscow, Vol. 3, p. 32.

[11] See B. Grekov, *The Peasants of Russia from Ancient Times Up to the 17th Century*, Moscow-Leningrad, 1946 (in Russian).

[12] K. Marx and F. Engels, *Selected Correspondence*, pp. 85-87.

[13] Th. Schieder, "Unterschiede zwischen Historischer und sozialwissenschaftlicher Methode", *The 13th International Congress of Historical Sciences*, Vol. I, Part I, pp. 71-72.

[14] A. Toynbee, op.cit., p. 162.

[15] Ibid., p. 163.

[16] Ibid., p. 165, for a Marxist criticism of Toynbee's views see E. Kosminsky, "The Reactionary Historiosophia of Arnold Toynbee" in *Problems of English Feudalism and Medieval Historiography*, Moscow, 1963; E. Markaryan, *On Conceptions of Local Civilisations*, Yerevan, 1962; I. Kon, *Philosophical Idealism and the Crisis of Bourgeois Historical Thought*, Moscow, 1959 (all in Russian).

[17] F. Engels, *Dialectics of Nature*, Moscow, 1964, p. 239.

[18] V. I. Lenin, *Collected Works*, Vol. 29, pp. 371-372.

[19] K. Marx and F. Engels, *Selected Works*, Moscow, 1969, Vol. 1, p. 396.

[20] See K. Marx and F. Engels, *Selected Correspondence*, p. 562.

[21] K. Marx and F. Engels, *Selected Works*, Vol. I, pp. 119-120, 126.

Developing Countries: New Researches

The Third World Today: Specifics of Its Development

RACHIK AVAKOV

Being a new one in its socio-economic and political content, the problem of development in the countries of Asia, Africa and Latin America has been unknown to the industrialised countries of Western Europe, the USA and Japan. Nor, for that matter, have the developed socialist countries been confronted with it in the aspect in which it figures on the agenda of the social life of the developing countries. What are the specific features of this problem? In what way has it been modified compared with the developed states? And what has the scientific and technological revolution added to its content that is new?

Generally speaking, the problem of the development of the Third World countries can be formulated as a problem of overcoming the state of underdevelopment and the dependent type of growth. This general formula, however, like the very concept of backwardness and underdevelopment, is differently interpreted in Marxist and non-Marxist socio-political and economic literature.

Contemporary non-Marxist science has not been able to elaborate an integral general theory of underdevelopment, to disclose the deep-rooted factors underlying this phenomenon, to establish the causal-consequential relationship of its origin with the specific features and laws of development inherent in world capitalism.

A fundamental methodological flaw of the Western conceptions, as we see it, is that the development of the Third World countries is fashioned into the Procrustean bed of the historical stages through which the capitalist states of the West had passed. Accordingly, various models of capitalist development are proposed as a solution to the problem. The works of many Western authors give a one-sided

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interpretation of the significance of the scientific and technological revolution for Asian, African and Latin American countries, often tend to distort the international conditions in which they are developing.

The dissonance in the interpretation by Western theorists of the underdevelopment concept begins with their definition of the mechanisms of development. When characterising the state of underdevelopment the authors concerned base themselves on various criteria and indices which, as a rule, are of a quantitative order. This determines also the very substance of the conceptions of development and of the practical recommendations proposed. The basic methodological premise, however, remains essentially the same: the developing countries are ranked in their progress with the capitalist countries from whom they are separated only by this or that distance. The prospects of the development of the former are accordingly seen as the possibility of these distances being covered by them at different speeds but, of course, only along the beaten capitalist track.

A characteristic feature of most of the Western conceptions is the refusal to consider underdevelopment as a systems phenomenon affecting all aspects of both the historical and the contemporary socio-economic, political and cultural advance of Asian, African and Latin American countries.

From a general conceptual point of view, W. Rostow's theory of stages, which coincides basically with the views of R. Aron, C. Clark or is close to them[1], is particularly significant.

In Rostow's conception economic growth passes through five successive stages: (1) the "traditional society", (2) the "transition period", in the course of which the preconditions are created for (3) the "take-off" characterised by profound changes in the economy and social structure of the country, as a result of which it reaches (4) "maturity" which eventually evolves into (5) a "consumer society".[2] In this scheme the developing countries are at the level corresponding to the first two stages and experience difficulties connected with the processes characteristic of the "take-off" stage.

Here it is important to note that the characteristic of the stage of economic growth of any country remains invariable, irrespective of the historical period. According to Rostow, for instance, the traditional society of pre-capitalist England is, in principle, identical with the present traditional societies in Asia, Africa and Latin America. In other words, no significance is attached to the changed conditions of development. Each of the stages is presented as something immutable, established once and for all, and everywhere characterised by invariable indicators. Accordingly, also the factors of development as well as the mechanism of economic growth remain invariable at all times.

The theory of stages is thus of an anti-historical, metaphysical character. This applies particularly to its basic conceptual postulates. Societies in this theory are deprived of the actual characteristics that distinguish them from each other. An eclectic mixture of techno-economic criteria is substituted for these characteristics. As a result,

countries with different socio-economic systems are "lined up" at the same, voluntaristically defined, stage of development. Rostow's theory, therefore, fails to give a real explanation to the development problem of the Third World. Small wonder that it has been criticised, at times sharply, by such prominent bourgeois theorists as P. Vilar, Fr. Perroux, and J. Freyssinet.[3]

As a matter of fact, Western science has not got a common conception of the development of the Third World. The Western conceptions are regarded as part of the political economy of capitalism and are based on its main theoretical postulates. Despite certain nuances and reservations, at times important ones, they all tacitly proceed from the fact that specific regularities of development differing from those of capitalism and the general line of its development, are not implicit in the developing countries. This is evident when analysing not only general theories that indirectly concern the Third World, but also the conceptions and models evolved on the concrete basis of this group of countries.

The basic criteria of underdevelopment Western scientists operate with may be grouped as follows:

Techno-economic criteria of underdevelopment.

Many researchers of Third World problems tend to interpret underdevelopment in purely techno-economic terms. In their conceptions the accent is made on various criteria of this group, while the entire comprehensive character of the phenomenon of underdevelopment is reduced to quantitative economic categories.

The gross national income or per capita income is often used as one of the most widespread synthesised criteria. Complicated calculations are made to show the connection of the index under consideration with other characteristics of the economic development level, with the state of man-power resources, etc. A study of the evolution of underdevelopment with the help of calculations of the growth rate of the national income, its division by sectors of the economy, and so on, makes for a more profound analysis. This kind of research is designed to prove that there is a definite correlation between the national income level, on the one hand, and underdevelopment, or the stage of social development, on the other. Thus, according to this conclusion, an income under $200-250 per capita is characteristic of the traditional society, from $250 to $500 of the society of the "transition stage" and from $500 to $2,000 of the developed industrial society.

Problems connected with the national income are seriously being studied by Marxist scholars, too, but with the fundamental difference that they reject, for very sound reasons, the narrow approach of taking quantitative indices as the basis for defining the type of society and social development, the concept of underdevelopment.

One may assume that, on the whole, a low level of economic development corresponds to a low national income. But a country that has achieved a high national income, as we see on the example of the oil-producing countries, is not always and not necessarily, economically developed. To an even lesser extent can the size of the national

income be a criterion for characterising socio-economic structures. It should also be stressed that in the conditions of the scientific and technological revolution, which has sharply projected the role of man-power resources (particularly of highly skilled specialists), the significance of the national income as a global index of the state of the economy is diminishing.

Another criterion widely used by Western authors is the level of capital accumulation.[4] The practical importance of this problem is indisputable. But this is not the question. To begin with, this criterion, too, cannot be absolutised. The example of the oil-producing countries shows that in some of them, including the least developed and whose economies sorely need modernisation, just the opposite phenomenon is to be observed—a surplus of capital which they are exporting even to developed capitalist countries. Secondly, a lack of capital cannot be taken as an adequate index for explaining the cause of the backwardness and underdevelopment of a country. Thirdly, the limited character of this index becomes increasingly obvious as the scientific and technological revolution unfolds. Evidence of this is the criticism of the proponents of the underdevelopment conceptions, based on this criterion, by their colleagues who stress the significance of human capital.[5]

Non-Economic Criteria of Underdevelopment.

In non-Marxist political economy one still comes across attempts to revive the reactionary conceptions of underdevelopment, based on criteria of a racist trend, and the outdated ideas of geographic determinism advanced in their time by the classics of bourgeois political economy. Not being of scientific interest, they do not call for particular attention. Let us examine instead an idea that has wider currency in Western theories of underdevelopment—the demographic factor. This idea is not a new one; it served as one of the postulates of the Malthusian population theory. What is new are the attempts to revive this theory on the soil of the Third World countries whose unprecedented demographic growth has, as it were, reinvigorated the adherents of this theory.[6]

Studies of population problems in the developing countries undertaken in Western socio-economic literature have yielded interesting results from the viewpoint of facts explaining the processes and trends of development of this phenomenon. Thus in-depth study has been made of such issues as the rapid growth of the population in these countries (the so-called demographic explosion), their high mortality and birth rates, short life expectancy, age structure, distribution of the population by sectors of the economy, characteristics of the urban and rural population, etc. Closely tied up with these issues are problems of employment, illiteracy, lack of capital and low productivity of labour. Although the analysis of quantitative tendencies, backed by scrupulously selected statistical material, is a sound one, this cannot be said of the theoretical assessments, and especially of the attempts to inter-relate directly the processes of economic and demographic growth, to say nothing of the

attempts to attach decisive significance to the demographic factor in the socio-economic development of the countries of Asia, Africa and Latin America. In this respect the reviewed conceptions with their rigid inherent determinism reveal their untenability and also their inability to give an integral interpretation of underdevelopment, leave alone indicate the ways of solving the Third World's development problems.

A major shortcoming of the conceptions of demographic determinism is that they are not able to explain the backwardness of many of the developing countries which, far from feeling the pressure of overpopulation, suffer from underpopulation. If the overpopulation factor can explain some serious difficulties (but not the conditions, leave alone the causes of underdevelopment) in such countries as the Arab Republic of Egypt, and India, it is totally absent, for example, in many of the African countries. It can hardly, therefore, serve as a universal criterion of the backwardness of the Third World. It is no accident that some researchers (G. Meier, H. Myint, and others), perceiving the considerable flaws in the demographic determinism concepts, have subjected them to criticism.[7]

The narrow social approach, but spelt out more fully, is characteristic of the conception advanced by J. Schumpeter. He bases his interpretation of underdevelopment on the absence in the developing countries of a real class of entrepreneurs as the principal agent of economic development, and accordingly reduces the problem of development to one of creating such a class. Taking issue with this thesis, P. Bairoch notes that "it would be an illusion to reckon on the sudden appearance (in the developing countries — *R. A.*), of a class of capitalist entrepreneurs, as was the case in the West in the 18th and 19th centuries. Such a class could emerge and play its role in that epoch, since the conditions existed then which have now practically completely disappeared)."[8] Unbelief in the possibility of such conditions being created is manifested also by other Western economists.[9] The actual situation in the countries of Asia, Africa and Latin America shows that capitalism's possibilities of development are severely restricted. On the other hand, the experience of the socialist countries, and now already of many of the developing countries themselves, particularly those of the socialist orientation, has convincingly demonstrated that there is no ground for reducing the process of economic development to one of creating a class of capitalist entrepreneurs. This process in the developing countries is unfolding frequently not only without such a class, but in spite of it; economic advance is to an ever lesser extent now the mission of entrepreneurs from the class of the bourgeoisie.

Finally, to mention yet another non-economic criterion—the "human factor". The conceptions connected with this criterion evolved under the impact of the scientific and technological revolution which is increasingly accentuating the importance of education as a factor of development in the contemporary world. It is one of the obstacles to their economic progress. But this factor.

too—the quality of manpower—cannot be taken as a universal criterion when explaining underdevelopment, when defining its underlying causes and prospects.

Criteria of a structural nature.

The question is primarily of conceptions whose authors see underdevelopment as being due to the existence of two sectors in the economies of the developing countries, and who emphasise in this connection that the abolition of backwardness lies through the absorption of one of the sectors (the traditional sector) by the other (the modern sector). Since in the overwhelming majority of the developing countries capitalist (or state capitalist) relations are the prevailing relations in the modern sector of the economy, the class and ideological content of the conceptions of dualism, which advocate industrialisation along capitalist lines, is all too obvious. Criticising these conceptions, the Algerian scholar A. Cournanel rightly notes that the abolition of underdevelopment calls not for modification of the economic structure through the absorption of the traditional sector by the capitalist one, but for "the overthrow of the structure" and the creation of a new system with a dominant socialist sector.[10]

Marxist researchers for their part consider that although a study of the problem of dualism is extremely important for understanding the problem of underdevelopment, they by no means identify underdevelopment with dualism.

Many Western scientists, among them E. Gannagé, A. Lewis, R. Nurkse, P. Rosenstein-Rodan and S. Schatz, have contributed to evolving the conceptions of the sectoral disintegration of the economies of the developing countries. In their works they characterise the various sectors of a dualistic economy, the specifics of intersectoral ties and the problems of employment in each of the sectors, etc. Some of them, for example E. Gannagé, speak not of the dualistic but of the pluralistic nature of the economic development in the countries of Asia, Africa and Latin America.

Although the afore-mentioned authors and many other Western scholars attach enormous importance to the factor of dualism when investigating the problem of underdevelopment, there are serious differences among them, particularly on the question of the prospects of dualism. Some of them hold that the elimination of dualism which is essential to the solution of the problem of development, is possible only through the absorption of the traditional sector by the modern one. Others, for example J. Freissinet, do not think that this is a must. Still others identify the modern sector with the capitalist economy. This narrow viewpoint is subjected to criticism by other supporters of the dualistic economy conception.

International criteria of underdevelopment.

The conceptions based on this group of criteria stem from the classical theory of international exchanges. The underlying idea is that underdevelopment is a result of negative phenomena observed in the international division of labour. Here it should be specified that this applies solely to the system of the international capitalist division

of labour, not simply to individual negative phenomena, and to the feature inherent in this system, namely, its unfair and exploiter character. However, the rational kernel in such conceptions, namely the connection between underdevelopment and the processes of development of the world capitalist economy, is actually lost in analysis of techno-economic data: trends in world trade, correlation between prices of raw materials and industrial goods, movement of capital between the developed and the developing countries, etc. This kind of concrete investigation helps to clear up many important, including fundamental, questions, but it is not able to advance analysis of the phenomenon of underdevelopment as such, to disclose its roots, to understand the mechanism which still not only maintains but aggravates the underdevelopment of the Asian, African and Latin American countries.

To this brief review of the main groups of criteria, widely used by Western authors in their conceptual interpretations of underdevelopment, we must add that on their basis and, naturally, with the usual methodological flaws, they build the numerous models of economic growth of the Third World countries. Despite the use of sophisticated means of economic analysis and reliable mathematical data, these models, perfect in their inner techno-economic logic in certain instances, are inapplicable in practice. This is hardly surprising, for as a whole they are patterned after the market economy of the highly developed capitalist states.

Such an approach clashes with the processes under way in the developing countries, processes which are characterised by an unusual interlacing of economic and social structures, by original manifestations and forms, often unknown to developed states. The contemporary scientific and technological revolution makes these processes still more complicated and contradictory in character, and the models proposed by Western authors insufficiently take into account, and sometimes almost not at all, the scientific and technological factor, its impact on the development of the Third World. Finally, and this is the most important thing, the incompatibility of these models, as also their underlying theoretical conceptions, with the reality of the developing countries stems from the fact that they are based on a metaphysical comparison and identification of different epochs of historical development—the pre-industrial period of Europe and the USA and the current stage through which the developing countries are passing. Such comparisons are justified, but their value lies in showing, first and foremost, the profound qualitative differences between these two periods, which at first sight appear to be similar. The identification of these periods according to their socio-economic content is distorting the essence of the objective processes under way in the Third World countries and gives a wrong idea of the forces and conditions of their socio-economic advance.

The aforesaid permits us to pass on to a definition of underdevelopment in present conditions.

To begin with, underdevelopment is a characteristic feature not of all countries of the world but of a certain group of them, and it

emerged at a certain stage in human development. It is a direct, natural result of the establishment of world capitalism which could develop only through division of the world into two groups of countries—the developed and the underdeveloped, the dominant and the subordinate. The capitalist model for overcoming underdevelopment may still, owing to the operation of the law of the uneven development of capitalism, take effect in some of the countries of the Third World, but if the phenomenon of underdevelopment as such is to be eliminated the solution must be sought beyond the confines of the general laws of capitalism.

Secondly, underdevelopment became the characteristic of a group of Asian, African and Latin American countries not because they lacked and could not generate internal impulses of development, the conditions and prerequisites for advancing along the "normal", natural historical path traversed by the present developed capitalist states, and not because these countries found themselves off the highroad of world development. They found themselves the victims of underdevelopment least of all because they were "predisposed" to it. Being a natural consequence and manifestation of the development of world capitalism, the underdevelopment of the Third World countries cannot be considered as a phenomenon that arose under the action of their internal law-governed development. This phenomenon is most closely bound up with the processes imposed on them from without—with colonial enslavement and exploitation.

The backwardness of many countries facilitated their conquest by the colonialists, but on the general historical plane underdevelopment is a feature of dependent development and as an international phenomenon it originated and took shape in the course of the establishment of the colonial empires. Thus, it is not underdevelopment that entailed dependence but, on the contrary, dependent development itself determined underdevelopment. But, having arisen as a result of dependence, this phenomenon became its nutrient medium, an obstacle to advancing beyond the model of development foisted on the Third World countries.

Thirdly, underdevelopment has become a qualitative concept and not a quantitative, or mainly quantitative, one. Thus, on the quantitative plane the gap in the development levels between Mexico and Chad is greater than that between the USA and Mexico. The same can be said when comparing such countries as, for example, France and Greece or Greece and Argentina. But taken by groups these countries are differently aligned: the USA, France and Greece constitute one, the dominant group, and Argentina, Mexico and Chad, the other. Let us note in this connection that evidently a distinction should be made between the concept "lag" and that of "backwardness" and "underdevelopment". Greece lags behind the USA in level of economic development but apparently there is not sufficient ground for considering her an economically underdeveloped country. Greece is not much ahead of Argentina according to the quantitative criterion. But from the point of view of the concept of underdevelopment or development as a category of a qualitative order, Argentina is

usually included among economically underdeveloped countries.

Fourthly, overcoming underdevelopment has a qualitatively different meaning than simply the transition from the traditional economy through the industrial revolution to the industrial economy, which was carried out in the last century by the countries of Europe and the USA. In the epoch preceding the industrial revolution the traditional economy was not considered a backward one, and advance beyond its confines did not signify the abolition of backwardness. Then it was a matter of transition from the one to the next, consecutive stage of economic development, from the traditional methods of management to the industrial methods. What we have in the countries of Asia, Africa and Latin America today is not a "quantitative" lag but backwardness, underdevelopment. They are at a qualitatively different stage of social evolution in comparison with the economically developed countries and what is most important is that this backwardness, underdevelopment, is constantly reproduced by the process of global capitalist development. In these conditions the traditional economy is not only a backward one but, in many respects, a stagnant one and a quantitative upward trend in production indices alone, although important, does not solve the problem of underdevelopment.

Fifthly, in the conditions of the scientific and technological revolution, not only the traditional but the agrarian-industrial, and to some extent even the industrial-agrarian types of economy, remain underdeveloped as compared with the more developed economic models that are formed in industrial states and are based on the progressive science-consuming industries. In the period of the industrial revolution such types of the economy were evidence of a high level of development. But their creation did not require the establishment of a research and development sector. In the age of the scientific and technological revolution they no longer can be considered highly developed, even though they are characterised by the existence of such a sector or a tendency towards its formation.

All this goes to show that under the impact of the scientific and technological revolution underdevelopment is becoming complicated and still more contradictory. At the same time the development processes in the Third World are changing both in economic and socio-political terms.

Let us examine, first of all, the structural changes in the economy of the developing countries. It is not enough to say that its structure reflects the fact that economically they are several historical stages behind the industrially and techno-scientifically developed states. What is also important is that the economy of the developing countries has its own scientific and technological features, that is, the features characteristic of a highly developed economy. Indicative of this contrast is, for example, the structure of their investments in the national economy, the fact that it is determined to a large extent by the interests of scientific and technological progress, the development of education and its own research and development sphere.

Thus, the scientific and technological revolution, being a result of

developed structures and expressing the requirements of a "scientified" economy, makes for the appearance and spread of elements of these structures and requirements on the soil of the economically backward countries of Asia, Africa and Latin America, which are inadequately prepared for this from the material and social point of view. Industrialisation there does not have the time needed to cope with its natural mission of developing the material productive forces; the time factor tells as also the circumstance that on the historical plane industrialisation is gradually becoming outdated, at any rate in the highly advanced countries. History has not given the developing countries the time needed for the stage-by-stage evolution of these processes. The violation of their sequence has led to contrasts in the economic structure of these countries, to the unprecedented complication of the problem of their development.

Similar changes are taking place also in the social sphere of the Third World countries. These changes are connected primarily with the process of formation of a new social structure, with the role of the intelligentsia, in particular the techno-scientific intelligentsia. Unlike the developed capitalist states where the intelligentsia took shape in conditions of the sharp class differentiation of society, in the Third World they are developing more as a force standing by itself and playing a relatively independent role. Although these countries are experiencing the early period of or even the transition period to industrialisation their need of a techno-scientific intelligentsia is many times greater than it was in Europe and the USA in the epoch of the industrial revolution, which is also a result of the specific forms in which the scientific and technological revolution manifests itself in an underdeveloped economy.

NOTES

[1] W. W. Rostow, *Les étapes de la croissance économique*, Paris, 1962; R. Aron, *Dix-huit leçons sur la société industrielle*, Paris, 1962; C. Clark, *Conditions of Economic Progress*, London, 1957.

[2] W. W. Rostow, *The Stages of Economic Growth. A Non-Communist Manifesto*, Cambridge (Mass.), 1960, pp. 4-16.

[3] P. Vilar, *Les stades du développement historique*, Paris, 1961; Fr. Perroux, *L'économie du XXe siécle*, Paris, 1964; J. Freyssinet, *Le concept de sous-développement*, Paris-the Hague, 1966.

[4] See J. Viner, *International Trade and Economic Development*, Oxford, 1963; P. Baran, *The Political Economy of Growth*, New York, 1957; A. Hirschman, *The Strategy of Economic Growth*, New Haven, 1969.

[5] See, for example, Fr. Harbison, Ch. A. Myers, *Education, Manpower and Economic Growth*, New York, 1964.

[6] See, for example, A. Sauvy, *Théorie générale de la population*, Paris, 1956; E. Gannagé, *Economie du développement*, Paris, 1962.

[7] *The Economics of Underdevelopment*, Oxford University Press, 1958.

[8] P. Bairoch, *Diagnostic de l'évolution économique du Tiers-Monde, 1900-1968*, Paris, 1969, p. 221.

[9] See L. D. Revil, *Les investissements privés en service du Tiers-Monde*, Paris, 1970.

[10] A. Cournanel, "Le concept du dualisme et la théorie du développement", *Revue algérienne des sciences juridiques, économiques et politiques*, Algiers, 1971, Vol. 8, No. 3.

DISCUSSIONS

Art and Cognition

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From the Editors. Issue 3, 1976, of our journal contained an article by M. Volkenstein, who took part in the discussion on the interaction between science and art, which was organised by the journal *Voprosy filosofii* (Problems of Philosophy). The following article was also prepared for that round-table discussion, held by correspondence.

There is a viewpoint that the existence of art is a mystery the key to which has yet to be found. As for science itself it is without any doubt essential as a method of cognising the objective world. Yet art, which for thousands of years has absorbed vast material and human resources and called for precious creative forces, has yet to find so clear-cut a definition that will reply to the question of why it is necessary and indispensable. How much richer society would be in the material sense if art did not exist! But Puritans who banned "vain" profane art failed to kill it either in England or in North American provinces. In all times, young people of talent have flocked into the realm of art, dooming themselves to the most arduous toil which, in ninety-nine cases out of a hundred, has brought them neither glory, wealth, nor even a sense of success. Yet they marched on steadfastly, driven by the same urge that drives fish upstream to overcome all obstacles, all rapids, so as to spawn, despite countless losses on the way, so that the mission built into them by nature may be fulfilled.

It would seem necessary to acknowledge as a "phenomenological fact" that, for some reason, mankind could not exist or survive without art, without a need of art, in the same way as it could never go on existing and survive without a thirst after knowledge, without the creative instinct, without man's love of woman, without maternal love, and so on. It is easy to find some objective foundation for all these "fundamental passions" or "instincts", although that objective foundation may be very far removed from the subjective intentions

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of those who have been carried away by such passions. Without them, man could not subdue the forces of nature and organise society on reasonable lines; nor could he continue his species or preserve the helpless infant. But wherein lies the necessity of art? There has been no lack of ideas on the matter coming from outstanding minds; yet the discussion, it would seem, cannot be considered at an end.

Of course, the very posing of the question may seem sacrilegious, but at a time when scientific knowledge has made such tremendous strides, we cannot limit ourselves to pathetic exclamations or approximate replies. We must try to tell, with the greatest possible precision, why art and art activities are necessary as *one of the conditions for mankind's existence.* Were that reason impossible of proof, it would have to be acknowledged that art is a pleasant and useful but non-essential plaything, whose functions should perhaps be turned over to more perfect products of man's genius. Without first ascertaining what it is all about, one cannot find a reply to the question of the necessity of art in the future.

THE SCOPE OF ART'S FUNCTIONS

A solution of the problem we are discussing is customarily sought in a study of art's functions. It is a remarkable quality of art that it simultaneously performs a *multitude* of functions; it is only the author's world-view, ideological direction, tastes or his stand in life that have induced him in his seeking for a reply to identify some particular function as determinant. It has been pointed out that art brings harmony into the individual's inner life; it gives enjoyment (the hedonistic function—enjoyment is not necessarily something elementary but may also be paradoxically linked with tragic emotions); it provides spiritual communion and an "emotional infection" (Tolstoy—the communicative function); it gives "purification"; it reflects life (the cognitive function—reflection is not naturalistic but creative and is therefore an act of cognition); it is edifying (the ethical-moralistic function); it makes it possible to experience, in a sublated form, emotions that are suppressed by some inner censor, and therefore rids one of inner conflicts and the neuroses they engender (a kind of "emotional vaccination"—Freud), and so on.

All this is true and indeed, these are functions that are inherent in art. However, all such explanations do not bring one satisfaction, first and foremost for two reasons.

In the first place, it has not been proved that all these functions cannot be performed in some other way, so to say, more simply, at cheaper cost. Enjoyment can be, or has been, provided by good food, bull fighting, cock fighting or gladiatorial contests, and by sports, and today it can be provided chemically or by implanting electrodes in brain centres that control pleasure. Spiritual calm—"harmony"—can also be achieved through hearing well-reasoned explanations or sermons, through prayer, psychotherapy, hypnosis or medically. "Reflection?" But why is reflection *necessary* in general, and why

reflect in *one way*, and not in *another?* Why can't cognition be scientific and organised more "cheaply" and reasonably? Thus, doubt could be voiced on *all* points regarding the necessity of art. It is, of course, possible that art's mysterious ability to perform all these multifarious useful functions *simultaneously* that makes it, *by and large*, both highly economical and most desirable.

Yet there remains a sense of dissatisfaction that, on the other hand, all these so different functions do not appear to be interlinked and mutually conditioned. What is there in common between the cognitive function and "purification", between the hedonistic and the communicative functions? Does not here exist some kind of overall and underlying nexus, a certain single and deeper function that determines them all?

Hegel, as we know, rejected the opinion that functions such as those we have named determine art's genuine mission. He thought that they had "no relation to a work of art as such"; they "do not determine its concept".[1] This is formulated in highly precise terms and preserves its significance to us, although one cannot agree with Hegel's affirmation that the purpose of art is the sensual depiction of the Absolute itself.

SYNTHETIC OR INTUITIVE JUDGEMENT

Hegel's words on the sensual nature of truth-comprehension in art has become a point of departure for numerous reiterations and variations. However, in an analysis of the process of cognition, there also exists, side by side with the "intellectual-sensual" contraposition, a contraposition of another kind: "the formally logical (as the purest variety of the discursive), and the intuitive". This contraposition would seem the more important because any reduction of art to purely sensual perception disregards the part played by the intellectual factors in an integral aesthetic perception.

No doubt, the extraction of two elements, even fundamental ones, from the complex process of cognition,—namely the logical and the intuitive—may lead up to an oversimplification of the situation. It is generally understood that, for instance, a synthetic intuitive judgement of itself takes the logical aspect into account, for it cannot but do so. The "feed-back" in the process of cognition in general and in the inferential in particular is considerable, so that reasoning cannot always be arranged in a row. Nevertheless it is advisable to distinguish between these two fundamental and, in considerable measure, alternative elements in the process of comprehension.

First and foremost, it should be emphasised that *in this argument we shall be speaking of intuition in the philosophical sense and not in the everyday meaning of the word.*

In everyday life, and very often in science, intuition is understood as an extra-logical anticipation or conjecturing of a road or an outcome, whose correctness can then be confirmed by strictly logical proof or by experience (conjecturing a mode of calculation that will

not lead into an impasse; guessing a direction in a locality so as to arrive at a specified destination and so on). After a conjecture has been proved right (and therefore replaced) in logical terms, this act of intuition may be forgotten, for it remains merely a fact in the private biography of the cognising person.

We shall have in view intuitive judgement as an immediate discernment of truth, i.e., discernment of the objective link between things, which is not based on proof. "In the make-up of what is comprehended by the mind there are truths that the mind recognises, not on the foundation of proof but through simple discernment of the content seen in them."[2] Such truth can later be mediated in terms of formal logic and then an intuitive judgement is reduced to intuition-conjecture, but may also *never be reducible to it, and does not even demand proof, which is impossible.* Psychologically, both kinds of intuition stand close to each other, which is probably why they are often not distinguished in an analysis of a creative process, etc., yet this distinction is basic in reality.

A most important example of genuinely intuitive judgement is that of the adequacy of a given, and, of necessity limited number of experimental tests designed to bear out the truth of a certain affirmation. This kind of judgement is expressed by, say, any experimenting physicist when he verifies a hypothesis, some law of physics or some particular empirically discovered dependence, or by any chemist, biologist or physician (whether a researcher or one diagnosing a patient) and so on. The same kind of judgement is expressed by a judge in a court of law who considers that the "evidence adduced as proof" (and which is not "proof" in the strict formally logical sense) is sufficient for him to pronounce a particular sentence. In jurisprudence this act of judgement is linked with the development of inner conviction.

It is only the sum of usually interwoven inferences founded on formal logic and intuitive judgements that leads to a productive and comprehensive method of cognition, i.e., dialectical logic. Since the latter, as we know, is at the same time a theory of knowledge, we shall try to give clarity to our further argument by keeping in mind, in speaking of logic, its formal variety, formal logic, i.e., some strictly and definitively closed system of rules of inference, a system that will make it possible, in particular, to entrust the inferential process to a machine.

There exist two extreme instances of correlating the logical and the intuitive. One of these is mathematics, in which a once established axiomatic basis makes it possible further to construct purely logical inferences. True, the masterly Gödel theorem predicts that, in any extensive class of logical mathematical systems, statements are bound to appear, of which, while remaining within that particular system, we shall be unable to say either that thay are false or that they are true. What will be required is a revision, a broadening of the axiomatic basis, i.e., a transition to a new logical system. That is an act outside of logic, and *if* we consider that a new system describes certain law-governed patterns of the physical world, then such a claim

will be an intuitive judgement, one that is "unprovable". Experimental tests may confirm it. In that case, just as for any generalising law of physics, the judgement in question will be mediated by experience, by practice, but it will yield place to a new intuitive judgement, one bearing on the adequacy of the experimental tests, i.e., the tested judgement is again reduced to one on the adequacy of the tests.

In mathematics, the logical and the intuitive are strictly marked off from each other, which is why a mathematician can work all his life long within the framework of a given logic, and lose sight of the inevitability of the intuitive element in cognition. That is how fetishism in respect of logical thinking evolves—an erroneous conviction that everything can be rigorously proved, so that what cannot be logically proved is not science.

Aesthetics and, in the narrower sense, *judgement of beauty*, can be quoted as an opposite marginal instance. The assertion "this is beautiful" is a purely intuitive judgement, which can be motivated by another intuitive judgement ("this drawing is excellent because its smooth and at the same time clear lines are beautiful"; "this picture is beautiful thanks to an excellent blend of colours") but it cannot be proved in terms of logic. These examples also reveal two important fundamental properties in intuitive judgement: in the first place, its blend of the intellectual and the sensual; secondly, its integral and synthetic nature—such a judgement involves a multitude of factors and components that cannot be enumerated. For the judgement "this is beautiful" to appear it is essential that a wide variety of associations should operate, which is why that judgement is linked with the entire life-experience of the person who has expressed it. He is influenced by his physiological condition, the timing of the statement, by social as well as national features, and so on. It might seem that, in principle, all these factors can be taken stock of, programmed and entrusted to a machine, thereby reducing a particular judgement to a logical inference. However, as was so wittily remarked by one of our outstanding mathematicians, it is quite possible that, in this contingency, we would have to programme the entire history of mankind and create a model of it. That unrealistic procedure is replaced by an integral intuitive judgement, which is an inference of a type higher than the logical. At the same time, however, it acquires features of subjectivity and the problem arises of its trustworthiness, truth, and objectivity.

It should also be emphasised that the very *trustworthiness of a judgement* of beauty is highly relative, since it is *itself historically, nationally, etc., conditioned.* Thus, 18th-century Russians saw no beauty in a Scythian stone statuette, while the attractiveness of adornments worn by women in Black Africa may not be appreciated in Japan, for example.

Ethical judgements, on the other hand, are intuitive (but not so purely so). It is only in some measure that they can be motivated by the interests of society or/and the individual. Thus, the truth of the dogmatic judgement "one should not be selfish" can neither be proved in terms of formal logic nor even mediated by a finite series of experiments. Here experience is patently contradictory and variable.

Further, in theoretical, as distinct from mathematical, physics, the division between the logical and the intuitive is not always as clear-cut as in mathematics. Thus, although the laws of dynamics describing the movement and interaction of gas molecules are well known, the so-called gas laws are introduced into the chain of argument as an independent empirical fact, i.e., a new intuitive judgement is introduced.

Things are even more complex in the humanities, in particular, in art studies. Here intuitive and integral judgements, as summarising appraisals of vast factual material, are most closely interwoven with logical judgements. The truth (or, at least, the cogency) of these judgements is clear only to one who himself has a knowledge of that factual material. Otherwise, the trustworthiness of a judgement cannot be appraised. In such complex areas of knowledge, the road also lies open to ignorant (even if, perhaps, subjectively well-meant) criticism and to pseudo-scientific creative activity, the erroneous nature of that activity remaining beyond the comprehension of its authors, who remain with a sense of fulfilment. In mathematics, on the other hand, an error in a logical argument can be both seen and understood with the utmost convincingness.

THE COGENCY OF SYNTHETIC JUDGEMENT ("THE CRITERION OF TRUTH")

Thus, cognition necessarily utilises both logic and intuition in an unbreakable connection. However, the relative part they play in various spheres of cognition differs. Knowledge in the area of the natural sciences is based on the possibility of repetitive experimental check up in identical external conditions. *Science can be defined as the achievement of objective truth, in which process the entire intuitive element is ultimately reduced (or is, in principle, reducible) to a judgement of the adequacy of verification as conducted through experience, practice.*

It should not be thought that this latter intuitive element is simple, or that the criterion of its truth (practice) can be easily applied. Thus, the existence of an all-pervading ether was recognised for thousands of years. Even in the highly scientific 19th century, the ether was regarded as an object of scientific research, as an essential and indisputable medium. Its waves were regarded as those of light. Maxwell, who evolved a complete system of equations for an electromagnetic field, for which purpose he introduced a new object into physics, that of displacement current, built complex mechanical models of the ether and considered "displacement" as actual motion of ether particles. As late as 1910, the outstanding physicist Larmor wrote the following: "The most fundamental experimental confirmation that the theory of the ether has received on the optical side in recent years has been the verification of Maxwell's proposition that radiation exerts mechanical force on a material

system on which it falls", and went on to explain that he was referring to Lebedev's experiments of 1900. He even made no mention of the theory of relativity advanced by Einstein, who, in 1905, showed that physics stands in no need of the ether, and that Lebedev's experiments had no bearing on the question of its existence.

Thus, the generally accepted judgement on the adequacy of experimental confirmation of the ether hypothesis *ultimately* proved erroneous. As said above, any summarising judgement expressed when a particular law is being established is, *in principle,* an act of intuition and conjecture (ultimately consisting in a judgement on the adequacy of experience). *However, if that verification through experience is protracted over a very lengthy period, then, during that period, trust in that law will be of the same nature as in respect of any genuinely intuitive judgement.*

Naturphilosophie differs from the natural sciences in the following: without appealing to decisive mediation through experience, although in some measure it takes some account of it, it is based on *various* and independent intuitive judgements which can in no way be reduced to a single kind of judgement—that on the adequacy of any particular verification through experience, practice.

However, aesthetic, ethical and other such judgements cannot be reliably verified through practice even in that measure. Therefore, such judgements cannot be reduced to a single kind of intuition—to judgement on the adequacy of experience. Though both experience and the logical element play a substantial part here, they cannot provide absolute conviction of their trustworthiness.

But what does the cogency of synthetic judgement rest on, after all? What induces one to regard it as the achievement of truth (of course, truth is relative in the same way as any concrete truth is)?

In fact, a decisive part is played here by *inner conviction*, a sense of satisfaction from such "direct discerning of the truth". A court of law that passes sentence or hands down a decision on the basis of "inner conviction", no doubt, decides to do so only when the bench is satisfied with that conclusion, which brings together in a single and consonant whole all the available testimony and "proofs", the latter, however, failing to form an irrefutable chain in terms of formal logic. An ethical dogma is accepted by the masses when each member of those masses derives a sense of satisfaction from it. The same is true of science, both when a new proposition (law) that sums up experience is advanced, and when verification through practice is acknowledged as adequate. To assign to personal experience the role of an objective criterion of truth is of course open to doubt, but such is the actual state of affairs.

This was already spoken of by Kant, who linked the capacity of synthetic judgement with the ability to experience satisfaction or non-satisfaction. We shall note that Kant uses the word *Wohlgefallen* which is usually translated as "pleasure". However *Wohl* means "well-being" so its translation as "satisfaction" or even "the creation of well-being" will probably be more in keeping with the German word. In this, Kant, of course, demanded that certain complementary conditions should be observed. In the first place, satisfaction should be universal (i.e., experienced by all who get to know the

judgement in question) or, at least, it should *lay claim to universality*. At the same time, ethic, social, religious as well as aesthetic judgements that are accepted as reliable and operate in that role, are inevitably limited, conditioned historically, socially and nationally, and therefore cannot be genuinely universal.

In demanding "universality", Kant, or course, proceeded from his conviction that, like such concepts as space and time, there exist *a priori* dogmas: moral ("the Categorical Imperative"), and aesthetic, which are just as absolute, extra-historical and also extra-social, and so on. The idea apriority of knowledge is unacceptable even in respect of space and time (and has been disproved by the development of physics). It is even less feasible in matters of ethics.

However, even if Kant's apriority principle is rejected, it is hardly advisable to eschew the idea that, *within the bounds set by historical, social, national, and other conditions, the criterion of the satisfaction experienced from an integral and immediate discernment, i.e., an intuitive judgement, does in fact play the part of a criterion of the trustworthiness (limited in accordance with those conditions) of that judgement*. An important kind of judgement is the discernment and deducing of the general from particular phenomena, what Kant called "reflexive judgements". In respect of ethical and aesthetic judgements, "a compatibility revealed...in respect of heterogeneous phenomena under a single principle involving them all",[3] in fact, means, in considerable measure, compatibility with an historically and socially conditioned world-outlook, in particular, with aesthetic norms.

A genuinely direct and integral "discernment of truth" is linked with a multilateral—both sensual and intellectual—grip of various properties, nexuses and mediations of phenomena, with numerous associations being involved. Such discernment is often of the nature of a flash of perception, and is exceedingly short-lived. There can be no conscious tracing of all the elements in that process. Full satisfaction from such comprehension of truth is possible only if all the nexuses and mediations (including, if possible, the logical ones) are nowhere tripped up by any contradiction, and if all the elements in the mosaic fall into place. An historically and socially restricted comprehension of truth is expressed in the fact that not all possible nexuses are taken stock of, but only those that are recognised in advance as essential. A contradiction with nexuses unaccounted for, and their escape from the mosaic pattern are ignored.

One might doubt whether different individuals can arrive in this manner at some single judgement, thereby establishing an objective (even if limited and relative) truth. However, its possibility, and the degree in which a coincidence of judgements permits even quantitative evaluation can be seen from some very simple examples. For instance, at ice figure-skating competitions, and likewise at musical, ballet, etc., competitions, a panel of ten referees coming from different countries but using accepted norms (with a "common world-outlook") award scores based on a six-point numerical system, and do so quite independently of one another. Experience has shown that the scores vary within a very narrow margin of not more than

±0.1 point, very rarely more. Yet each score is the result of a genuinely intuitive synthetic judgement (which, of course, is also based partly on logical considerations). This will be best borne out by the impossibility of entrusting the functions of such a panel to a computer. No programme with a finite number of elements is able to appraise the ease with which a leap figure has been performed, the smoothness of a descent, the gracefulness of a particular posture and the natural transition from one figure to another, with the entire range of movements in full consonance with the musical accompaniment. However, this example, of course, refers to a relatively simple situation.

THE MISSION OF ART

Given our epistemological approach, how can one define art and its mission?

The aesthetic and intuitive judgement "this is beautiful" practically contains no discursive element. Its object may be a simple smooth line, a single patch of colour, a sound of a single pitch but varying in timbre and dynamics. A smooth line may evoke—mainly subconsciously—an association with the curve of a drooping flower, the outline of a female body, the trajectory of the flight of a rocket, the crest of an advancing wave and so on. In summarising all these and presenting them in a sublimated form, the judgement "this is beautiful" is practically Kant's "reflexive judgement" and correspondingly evokes a sense of satisfaction, pleasure (the hedonistic function). A line, a patch of colour and a musical note may alarm, soothe, irritate or gladden, that depending on the nature of the subconscious associations. In other words, it can evoke emotions. When it acquires a mass scale, such a judgement may give rise to "emotional infection" (Tolstoy's "communicative function"), etc.

Associations need not be consciously concrete, but may contain other sublimated images; the judgement "this is beautiful" again need not be the only and exhaustive intuitive judgement evoked by some work of art. If the latter contains a concretely material element, and therefore one that is discursively mediated (the discursiveness need not be exhaustive, for otherwise the "content" in a work might be set forth and exhausted by meaningful words) then, given superficial perception, the intuitive element may escape and the role of a work of art will be reduced to illustrations that can easily be retold. That is why *the equivalent perception and comprehension of the intuitive truth* in a work of art *calls for a high degree of mobilisation of intellectual and emotional potentialities*, i.e., a state called *inspiration*. "Inspiration is the soul's disposition to the keenest perception of impressions, and to a juxtaposition of concepts, and consequently to an explanation of these. Inspiration is needed in geometry no less than in poetry"[4]—that is how Pushkin so very precisely put it. We thus see that inspiration is demanded not only from the artist but also from

those who are to perceive his works. Art is effected only when it is capable of evoking that inspiration and "fellow-creativity".

Community of conditions for existence and community of culture and the history of the personality-moulding ensure, to a wide range of percipient subjects, a sufficiently extensive stock of similar associations, and therefore evoke similar and even coincidental judgements, i.e., ensure a certain "universality". On the contrary, if I may be forgiven a hackneyed example, white is the colour of mourning in China, so that the judgements of a Chinese and a European may be different when they regard one and the same work of art containing that element. This community of intuitive judgement enhances its convincingness. Thus, art makes possible a "*universal*" (given the limitations mentioned above) and convincing comprehension of intuitive truths.

It is sometimes very simple to express an intuitive judgement in words. For instance, it is very simple to say: considerations of family prestige and family hostility should not prevent two young hearts from being drawn to each other, for, once awakened, love should stand above such things. This cut-and-dried statement may be right or wrong. One can attempt to prove it discursively, but that is hopeless business because arguments just as convincing may be adduced to refute the judgement. However, when a *Romeo and Juliet* has been created, and when this tragedy is performed by actors of talent, a dogmatic intuitive judgement acquires—thanks to the extra-logical elements of art—a new degree of convincigness, thus becoming, in essence, indisputable.

Further, one may affirm that human existence acquires genuine value when it is marked by a lofty spiritual life, by a comprehension of the grandeur of suffering for the sake of others, and by the aloofness from everything that is petty and pedestrian. One can argue on this score and adduce considerations and proofs, but that will not lead to any convincing conclusion. However, when one listens to Bach, his music convinces and fills one with spiritual uplift as an indisputable argument that "proves" far more than can be expressed by poor words, such as those given above, (and, moreover, that subject-matter contained, for example, in words need not be present in Bach's music).

Throughout the entire history of mankind, religion has performed a similar function of the intuitive comprehension and affirmation of truths. Now it still continues to perform this function. Propositions of a factual nature (for example, regarding the Creation) and norms of social organisation and behaviour have been established by religion outside of logical proof and without any appeal to experience. Their convincingness has been achieved through a reduction to a single intuitive dogma—the authority of certain supreme forces or of a Supreme Being. Rituals, mysticism, in part even discursiveness, and—in vast measure—art have been used as methods of institutionalising that dogma.

In principle, religion could probably do without art. The dogma of the existence of a Divinity, and of supreme forces in general, whose authority would confirm the trustworthiness of intuitive judgements could also be inculcated by other methods. Art has been utterly ignored in such ideologically organised systems of the religious type as Free-masonry and Quakerism. However, art is too potent an instrument for religion to refrain from utilising it.

Indeed, religion is a possible method of establishing intuitive truths. However, with the development of scientific thinking, most of religion's

methods become ineffective. This also refers to the prestige of a Supreme Being.

Yet, if the need has passed for an intuitive assertion of factual propositions pertaining to natural science (the nature of the Universe, hygienic norms, and the like), that does not lead to any decline in the role of intuitive cognitions as a whole (as we have seen it is necessary, in particular in science itself). In these conditions, the establishment of the prestige of intuitive judgements formally belonging to religion, may be performed by art, which remains unshaken.

Indeed, we can say that *art, if understood as a phenomenon involving the activities of both the artist and of the perceiving individual, means the achievement of intuitive truths in a way which, to be convincing, does not need to be reduced to the intuitive idea of a supreme authority (religion) and permits no reduction to a single judgement only of the adequacy of verification through experience (science), but itself, through its impact, ensures the convincingness of comprehension, i.e., bears within itself the criterion of correctness.* (This definition, is, of course, unsuitable if we understand by art merely a totality of works of art: it may be said that the latter comprise the material foundation for such a comprehension.)[5]

That comprehension becomes possible because, *as a method*, art arouses and develops a complex of intellectual and emotional possibilities in man, producing in him a condition in which an integral and intuitive achievement and recognition of its convincingness become possible, i.e., a condition of inspiration.

Let us now consider art as an *object* of the artist's creativity, and of perception by those who must share the artist's intuitive comprehension.

If, in a work of art, we distinguish, in mind, the element of concrete subject-matter so often manifest in it (although it may not be present, as, for instance, in ornament, instrumental music and the like), and, moreover, if we bring out—if that is possible—the idea conveyed in a work of art, i.e., if we separate in it everything that can even, in approximation, be expressed, comprehended, and suggested by other means (of course, all this operation being accomplished only in thought and conveying a negative impact on the perception of a work of art as a whole)—given all these conditions, we can arrive at the conclusion that elements specific in art are needed exclusively to give that idea convincingness.

Therefore, *the purpose and mission of "art as such" consists in ensuring the authority and convincingness of intuitive judgement, in order to "convince of the unprovable".* After achieving that aim, a work of art and art as a whole *reveal the force and productiveness of synthetic judgement—of intuition—in counterbalance to the authority of the logical and in general of the discursive method* of comprehending truth.

All other functions of art do not "determine it", so that their presence in art may evidently be understood on the basis of that main function.

Thus, cognition by methods of art stands opposed to the logical

cognition of truth, in the way intuitive cognition stands opposed to discursive cognition. Such cognition is different from the cognition of scientific intuitive truths, inasmuch as it carries within itself the convincingness of what has been comprehended but not established through experience, i.e., is not reducible to a judgement on the adequacy of experience.

The distinction from discursive comprehension is absolute, while the distinction from the intuitive comprehension of scientific truths is relative, inasmuch as, in both cases, it is a matter of a synthetic and direct discernment of truth.

In establishing the authority of intuitive comprehension of truth, art thereby demonstrates the limitedness, the inadequacy of logical cognition and thereby fortifies the authority of the intuitive achievement of truth in general, and in the exact sciences in particular. It destroys the monopoly of logical analytical thinking, a monopoly which would otherwise lead to complete helplessness in the cognising intellect. Art thereby makes man capable of achieving what is genuinely scientific and helps him fully cognise the material and spiritual world. To simplify this conclusion and at the same time give it more point, we can tersely define art's main mission as follows: *art teaches inspiration.*

THE NECESSITY OF OTHER FUNCTIONS OF ART

The above assertion of the mission of art is an example of intuitive judgement. Expressed in respect of the humanities, it does not permit the same rigorous and trustworthy verification through experience (i.e., by a reduction to a judgement of the adequacy of experience), as is usually the case in the natural sciences. However, something of the kind is possible. We can test the productivity of this proposition and verify whether it is in accord with other certain features and law-governed patterns in art, so as to find out whether that proposition helps us to understand them.

In the first place, it can be shown that the numerous and broadly accepted other functions of art which, as already said, are seen as completely unrelated among themselves and not indispensable are, in reality, inevitable when the basic function formulated above is being carried out.

The limits of the present article do not permit us to do that *in extenso*, which obliges us to limit ourselves to brief remarks. The necessity of the *hedonistic function*—"enjoyment"—becomes obvious. Satisfaction—*Wohlgefallen*—is an inherent property of an intuitive judgement that is reliable (in respect of a given socially, nationally, and historically united group of subjects). This emotion is not reducible to elementary enjoyment of an almost physiological type but it makes it possible to understand the satisfaction felt from perception of tragic art. If art is limited to elementary enjoyment, it can enhance only the emotional but not the intellectual potentialities of man. In this case, his capacity for an integral and intuitive

comprehension of more complex truths may, generally speaking, not be enhanced, but, on the contrary, may be dulled.

In essence, the *cognitive* function has been the foundation of all our arguments. The authority of a judgement must be established to achieve a plenitude of cognition. It is not a question here of an acquaintance with concrete factual material, something which can be accomplished without the specific methods of art, for example, through simple display (as of waxworks at Madame Tussaud's) instead of viewing the exhibits at the Vatican Gallery, and therefore does not need inspiration; what we are referring to is the comprehension of profound truths, for which alone "art as such" is necessary as ensuring the convincingness of comprehension.

It may be asked: is "pure art" possible, one stripped of any *ethical* idea? That is doubtful. Effective art brings into play such an extensive range of associations and emotions that the emotional elements linked with a moral idea probably cannot but find expression. But from the viewpoint of society that impact may be seen as "good" or "evil".

That is why art is a keen-edged tool, one which, on the ethical plane, may be both beneficial and detrimental to a given society. "Why is it," Seneca asked, "that children are taught the liberal arts? Not because they are capable of imparting virtue but because they prepare the soul for its perception."[6] But souls, thus prepared, can perceive "anti-virtue" as well.

It is widely accepted to define art's most important function as "*a reflection of life*" (of course, we are speaking, not of literal reflection but of art as creativity, in other words, we do *not* have Madame Tussaud in mind). Why that function is also necessary can be readily understood. Indeed, the intuitive and integral comprehension of an idea presupposes, as has been frequently emphasised, a synthetic mobilisation of associations, of the cognising subject's life-experience and intellectual capacities. They are all moulded of what is provided by the objective material and spiritual world. Therefore, the comprehension is convincing only if art addresses itself to that material, and makes use of it.

One can also understand the necessity of the *communicative* function.

Art's ability *to bring harmony* into spiritual life has been justly regarded as one of its most important features and functions. In fact, at least *three different meanings of the word "harmony" must be distinguished.*

The first aspect is linked with the assertion that art is necessary for the moulding of *harmonious personality.* It has long been said (Schiller?) that, in the world of today, with its specialisation, its involvement with rational activities and with the separation of technical skill from artistic creativity, man is faced with the threat of one-sided development, which is why *the balancing influence of art is necessary.*

This assertion is undoubtedly true. However, in the way it is usually formulated, it is most difficult of proof, especially from the viewpoint of representatives of the exact sciences. Indeed, *why is it*

so necessary to be harmonious? And what is meant by being harmonious? I shall cite an elementary example. If a man is right-handed, that should probably mean that he is less "harmonious" than another who writes equally well with his right and his left hand. Does that mean that all should be taught to write with either hand? In more serious terms, any scientist, or in general, any expert in some particular field knows that proper performance in that field requires the greatest possible concentration of time, mind and effort. Full universality or "harmony" in the individual is scarcely possible; indeed, is it necessary?

However, a reply to the question can be found. The trend towards rationalisation is based on a hyperbolisation of the role of the discursive. That is disastrous to cognition, and consequently to mankind in general. By helping to destroy the monopoly of discursiveness, art becomes one of the most important conditions for the comprehension of the material and spiritual world, even of those of the latter's aspects which comprise the object of the natural sciences, as said above. Therefore, the desire for harmonious development of the individual is given a foundation. That is the first aspect of "harmony".

However, art brings harmony into inner life in a substantially different meaning—the general *perception of reality*. Thus, the physicist's supreme task, Einstein wrote, "is the discovery of the most general elementary laws from which the world-picture can be deduced logically. But there is no logical way to the discovery of these elemental laws. There is only the way to intuition, which is helped by a feeling for the order lying behind the appearance..."[7] In Igor Stravinsky's opinion, "*Le phénomène de la musique nous est donné à la seule fin d'instituer un order dans les choses* ... ("The phenomenon of music is given us with the sole aim of bringing order into things.")[8] In both instances, the reference is to *a discovery of order where it cannot be discovered discursively, logically*. This creates, in the individual's inner world, *a feeling of serenity*, achieved, *of harmony*, because "the discovered compatibility of two or more empirical and disparate laws of nature under a principle that embraces them both provides cause for most marked pleasure and often of delight, too".[9] This "reflexive judgement" means the comprehension of the *harmony of the world.*

Then there is the third element—the "therapeutic" force of art which, in essense, finds expression when it is *impossible to make the discursive, rational choice* in a situation of conflict, and contradictions rend the soul. Art gives convincingness to the intuitive choice made between various possibilities; it dispels doubt, and makes the *inner spiritual stand* impregnable.

To Ossip Mandelstam belongs the excellent aphorism: "Poetry is an awareness of one's rightness." As Boris Pasternak wrote:

> "Chopin once more seeks no advantage
> But, soaring in solitary flight,
> *Marks out the way to egress*
> *From probabilities to rightness.*" [Italics mine.—*E.F.*]

The reference is to "rightness" as to a truth that cannot be substantiated or proved (but only motivated in some measure), yet, on the other hand, can be comprehended intuitively, and firmly established through the means of art.

No logical choice between various "probabilities" is possible. It is only intuition that "marks out the way", while art, because of its lofty mission, gives that choice the convincingness of "rightness".

It follows, however, that such "harmony" is not necessarily serenity. An inner conflict, doubt, can also be resolved by a consciousness of being right even when art rouses one for the struggle, and not only when it reconciles one with some painful inevitability. The "harmony" in the inner world of the fighter, the challenger, may be different in nature from what is usually associated with the word; yet it is fundamentally the self-same resolution of an inner conflict.

We thus see that in all three cases art performs its function—the establishment of "harmony"—for the very reason that it is capable of giving authority and convincingness to the intuitive judgement *in contraposition to* the helplessness of the discursive.

THE FUNDAMENTAL CONFLICT IN A WORK OF ART

If it is the mission of art to escape from within the purely logical, and to contrast the authority of intuition to that of the discursive, then it may be thought that the fundamental conflict in a genuine work of art must be *that between the logical and the intuitive*, the resolution of which should fortify the authority of the intuitive, signify the victory of the extra-logical over the logical. Of course, that is not necessarily the sole and exhaustive conflict but to it belongs a fundamental role. That can be easily seen.

The triumph of the extra-logical arises at different levels in art. The simple circumstance that the artist is able to "breathe life" into soulless marble, drab canvas and simple prose words is the miracle of an overcoming of material, or, more precisely, "an overcoming of the logic of material", and is an act of victory of the extra-logical over the logical. If marble, i.e., a stone that symbolises lifelessness and is the opposite of the human, can be womanly tender, as is the Venus of Milo, or suffering, as the Laocoon, or profoundly thoughtful or erotic, as Rodin's *The Thinker* and *The Kiss*, then such things are a miracle of that overcoming. It is an irrational transformation of material in a work of art, each element of which is prosaic and rational, that amazes us most of all, and exerts such an impact.

Then there is the next level, one that does not affect (or at least, not very deeply) the element of content in a work of art. The reference is to convincingness in utterly conventional elements, "not naturalistic" ones. The single-plane paintings of the pre-Raphaelites, Modigliani's unnaturally elongated figures, the bridegroom in flight in Chagall's painting, the monument to the victims of the bombing of

Rotterdam, the theatre of ancient Greece and the theatre of Meyerhold—should the examples be multiplied? Whenever a concretely material image is purposely extended beyond the framework of naturalistic imitativeness, and the conventional in the depicted is sharply but convincingly emphasised, there takes place the extra-logical triumphs over the logical. It may be said that what is achieved here is the "*overcoming of the logic of a concretely material image*". Of course, all art is conventional. The most naturalistic theatre, for example, is conventional already because the viewer pretends not to see the absence of a fourth wall on the stage, and because the actor "does not notice" the audience.

However, a far more acute conflict arises when the orderly structure of a work, on the one hand, and its intuitive idea—the genuine content—on the other, are contrasted. Any work of art is subordinated to a definite system of rules, even if at first these innovated by a genius are denied recognition. They may be formulated with the utmost rigidity and technicality (e.g. in music: the "strict counter-point" of the 16th and the 17th centuries, and the serial technique of our own times, and the like), but they may be also presented in a more flexible and "amateurish" form. However, the system of rules and laws a work of art has to be built on is always there, and always has its own orderly "logic". A supreme art conception—an idea born of inspiration and therefore intuitive—should reveal itself in a blend with that logic, and prove superior to it.

We can say that the contraposition of a logically ordered structure and an intuitive idea (content in a generalised and not concretely material sense) in a work of art leads to an *overcoming of the logic of its form* (or the logic of a structure, composition).

At all three levels in the overcoming of the "logical" by the intuitive, we come up against a remarkable phenomenon: the logical is not cancelled or completely suppressed, but remains an essential element of art. Its combination with the intuitive, in which the latter is victorious, in itself comprises a most important element of the artistic impact. Moreover, the logical affects the intuitive. It will suffice to picture to oneself one and the same sculptural model rendered once in marble and then in wood, to realise that in both instances we will have an overcoming of the logic of the material used, but we shall have two essentially different sculptures, with different facets of artistic content. The logical, expressed together with the intuitive, proves overcome but not stripped of value.

The same will also be seen when the conflict between the logical and the extra-logical proceeds in the sphere of the content, and produces a work of drama, or to the latter's most acute form: tragedy. In this case, we can speak of the "*overcoming of the logic of the content*".

An instance of a vivid realisation of the latter will be seen in the following quotation from Tvardovsky:

> "I know it's something I can't answer for
> That others did not come back from the war,

> That soldiers young, and not so young, all met
> Their fate out there; nor is it culpable
> That I, who might have saved them, was not able—
> It is not culpable, and yet—and yet—".

The extremely prosaic fabric of the verse has been overcome by its poetical spirit. The unquestionably correct and reasonable thesis expressed in these few lines, *while remaining correct*, suddenly droops, as it were, at the appearance of the second half of the last line, which, from the rationalistic point of view, contains something out of place, and quite clumsy: "—and yet—and yet—".

This kind of conflict may be multiple and on several planes, and the latter may be hierarchically subordinate to one another, but may also be intertwined on a single level. It is quite probable that, in many cases, when the conflict seems to be on a single plane, a deeper reading may reveal new clashes.

A few words might be in place here regarding a still more intense and extreme expression of dramatic conflict—a tragedy.

There has long existed a definition of tragedy, which says it is a dramatic conflict in which both sides are right, and the conflict can be resolved only by the death of the main character. This definition, it would seem, is inadequate, incomplete. It may probably be affirmed that both sides in a tragedy are right, only in different ways: one in the sense of the logic, the rational, and the other in the sense of the intuitive, the irrational, the human. The hero's death typifies the physical end of one who represents the latter aspect of the matter. It plunges us into sorrow, thereby establishing the triumph of the intuitively right over the discursively right.

The conflict between Pushkin's Salieri and Mozart is not between envy and genius, but one between a consistently "scientific" line and an "extra-logical" one. The splendid words:

> "I then dissected music like a corpse,
> Proved harmony by algebraic rules..."

are on two different levels. The immediate meaning is that Salieri has studied the fabric of a piece of music in the same scientific manner as the anatomist, whose science was one of the most developed at the time. The implication is that it was not music that he studied, but its corpse. The entire meaning of music—like that of any art—consists in its synthetic intuitive effect, something that a corpse cannot have. Harmony can be proved by logical algebra only in the measure in which the logical element is present in a piece of music and is contraposed to the extra-logical—principal—line. Mozart perishes, but his death confirms the wrongness of the "scientific" and rational Salieri.

Othello, as Pushkin long ago said, is not a jealous man but a trusting man. But what does he place his trust in? In "proofs"—the handkerchief and Iago's rational arguments: Desdemona has deceived her father, so why can't she do the same with her husband, and so on. In the agonising murder scene, the audience's silent anguish might be expressed in words of reproach to Othello: "You, so wise, strong and

experienced: how could you have believed the 'proofs' of Desdemona's guilt? You should rather look at her and realise the truth, which stands in no need of evidence—she is pure." However, of the alternative judgements—the true (Desdemona is innocent), and the false (she has been unfaithful)—Othello chooses the false only because, we shall say, it can be mediated discursively, and is supported by logical arguments.

But we can go farther in this analysis. It is obvious that the proofs Othello gives credence to are not genuine proofs in the sense of formal logic (for otherwise they would not have led to an erroneous conclusion). In seeing them as evidence of Desdemona's guilt, Othello actually and *anyway* resorts to intuitive judgement, that of the *adequacy* of the evidence. The tragedy of Othello and Desdemona reveals the cause of the precariousness of the logical approach to a "human" situation. So numerous are the substantial factors in ethical, many social and other similar problems that the available element of "proof" and the "logical" necessarily embraces only a small share of those factors. That is why the ensuing judgement, which is based only on that available material which it recognised as adequate, so often proves false. In these conditions, as the artist would put it, an integral intuitive judgement of the essence of the question, and perhaps quite neglectful of the "proofs" that swim into its ken, is more trustworthy than an intuitive conclusion regarding the adequacy and convincingness of the available "logical" element.

In antique tragedy, the fundamental conflict develops between Fate or Duty and the individual with all the concomitant human features. As Belinsky put it: "What is that 'fate' which makes people tremble and evokes complete submission in the gods themselves? It is the Greek concept of what we, latter-day people, call reasonable necessity, the laws of reality, the *relations between causes and effects* [Italics mine—*E.F.*], in short, an *objective action* which develops and follows its own path, motivated by the inner force of its reasonability." In other words, the conflict between the grounded, the discursive, and the personal, the intuitive comprises the essence of antique tragedy. In Sophocles's *Antigone*, "the heroine of the tragedy embodies the idea of natural family law, whereas Creon personifies the triumph of state law, the force of law".[10] By her death, Antigone establishes the primacy of the intuitive over what is logically law-governed.

It may well be that these examples (which might be easily amplified) are not the most convincing, and have not been explained in the best possible manner. Moreover, they have all been borrowed from the realm of art which expresses itself in language or possesses concrete subject-matter. Can confirmation of the same ideas be found in arts that are free of concrete materiality, such that we may conventionally call abstract arts, such as symphonic music (in general, instrumental and non-programme music); the ballet when not based on pantomime; architecture; abstract painting and sculpture, and ornament in particular? There can be no doubt that here, too, we have a conflict between the logical and the intuitive, one that is manifested in an overcoming of the logic of the material and of the logic of form. However, here, too, analysis, from the selfsame point of view, of the content is undoubtedly a very difficult and delicate matter. It is very easy to fall into vulgarisation. But the existence of that conflict is indicated by the appearance of conflicting emotions when such art is being perceived (for example, instrumental music).

As we see it, the examples cited above make it possible to confirm the thesis about the "fundamental conflict in a work of art".

CONCLUSION

Thus, cognition of the objective world, both the material and spiritual, is impossible without utilisation of the two fundamental roads towards comprehending truth: the discursive and the intuitive. But while the reliability of discursive comprehension is ensured through observance of the rules of an accepted system of inferences, the convincingness of intuitive comprehension—in particular, the contribution made by intuition to the establishment of the initial principles of a logical system—is essentially linked with the specific criterion of "inner conviction", "inner satisfaction", "pleasure", "*Wohlgefallen*", or whatever else we may call it. With all the additional demands presented to intuitive comprehension ("universality" and so on), its authority is placed in a difficult position where it has to compete with the authority of the discursive. Yet, without intuition, discursiveness, as enclosed within itself, is helpless and can ensure sufficiently full cognition neither in ethics nor in the natural or social sciences. Of course, in respect of the truths of the natural sciences alone, the authority of intuitive comprehension is fortified by the success of development of scientific knowledge, which inevitably makes use of intuitive judgements. This, however, refers only to the structurally simplest judgement—that on the adequacy of confirmation through experience. At the same time, the common nature of intuitive judgement in art and in science, the common nature of the inspiration necessary for intuitive comprehension in science and art, makes art a field of the comprehension of a most extensive range of intuitive truths and a *method of establishing the authority of intuition in general*. This role has been performed by art throughout the history of mankind. In times when discursiveness and scientific methods were poorly developed art was used to establish the trustworthiness of the intuitive comprehensions which were later to become the object of science. Thus, it was not fortuitous that the verse form and images were used in the natural philosophy of the ancients (e.g. Titus Lucretius Carus, *De rerum natura*).

But even in the era of scientific knowledge, intuitive comprehension has never lost its immense significance (although some objects of judgements that used to be mediated discursively and through experience have entered the realm of science). Moreover, the mounting authority of discursive knowledge, which has even led to attempts to fetishise the discursive, on the one hand, and the

diminishing of such sources of intuition's authority as religious mysticism, rituals and appeals to divine authority, on the other, present heightened demands to art as a whole, and to the associative, emotional and intellectual receptivity of those that art is addressed to. Herein possibly lies the cause of the increasing complexity and enrichment of the forms and means employed by art.

It may, therefore, be assumed that art as a method helping to defend cognition against the monopoly of the discursive (whose functions are more and more being turned over to machines) and thereby to ensure the plenitude of cognition will also be necessary in the future, inasmuch as adequate and full cognition is, on the whole, an essential condition for mankind's existence.

In our days which—appropriately or not—are sometimes called the epoch of the scientific and technological revolution, and which are indeed a time of a tremendous development of scientific knowledge, no threat exists to the authority of the discursive, whose usefulness is only too manifest. However, there does exist the danger that its role may be hyperbolised, that the significance of intuition may be belittled, and that the capacity of integral and correct intuitive judgement may be weakened. That is why the role of art today is particularly important.

NOTES

[1] G. Hegel, *Works*, Moscow, 1938, Vol. XII, pp. 59-60 (in Russian).

[2] V. Asmus, *The Problem of Intuition in Philosophy and Mathematics*, Moscow, 1968, pp. 3, 5 (in Russian).

[3] E. Kant, *Collected Works*, Moscow, 1966, Vol. V, p. 187 (in Russian).

[4] A. Pushkin, *Complete Works*, Moscow, 1954, Vol. V, p. 35 (in Russian).

[5] V. Belinsky's uncompleted article "The Idea of Art", which has been published in its rough copy (V. Belinsky, *Collected Works*, Moscow, 1948, Vol. 2, p. 67, in Russian), begins with the following definition: "Art is the *immediate* contemplation of truth...". We might have used these words as an epigraph to the present article, so close they are to our fundamental thought, had not Belinsky ended the sentence as follows: "or *thinking in terms of images...*", and went on to give an absolutely incomprehensible and unacceptable explanation of the word "thinking" (which, as he himself wrote, was of the utmost importance for its formulation, and was paradoxically compared with the word "art"): "All the existent, all that is, all that we call matter and spirit, nature, life, mankind, history, the world, and the Universe—all these is *thinking*, that which thinks itself" (ibid., p. 68). It would seem that, when he was penning the existent draft of his article (1841), Belinsky was a convinced Hegelian. He did not return to his wording of the essence of art until the end of his life, though the idea of the "immediate contemplation of truth" can evidently be surmised in many of his writings.

[6] Lucius Seneca, *Opera Omnia*, Parisiis, 1828,Part 1, Vol. 3, pp. 634-635.

[7] M. Planck, *Where Is Science Going?*, Preface by A. Einstein, London, 1933, p. 12.

[8] I. Stravinsky, *Chroniques de ma vie*, Paris, 1935, p. 117.

[9] *E. Kant's Gesammelte Schriften*, Berlin,1913, Vol. V, p. 187.

[10] V. Belinsky, *Collected Works*, Moscow, 1948, Vol. 2, pp. 16, 27 (in Russian).

CRITICAL STUDIES AND COMMENT

Sociological Analysis of Works of Art in Western Researches Today

MARIA KURGINYAN

The sociological principles of studying works of art have often been proclaimed outmoded, yet their necessity has been borne out time and again by the development of scholarship. It is becoming ever more evident that scarcely any other methodological principles can display the same capacity of enrichment, development and synthesising expansion as the principles of sociology.

Soviet researchers have already noted the mounting interest in sociological methodology on the part of Western scholars too in recent decades. The reason, as I see it, has been the enhanced prestige of Marxist science, as well as the current crisis of structuralism and other formalistic trends in present-day literary studies abroad, a crisis stemming from the obvious fact that literature cannot be divorced from its social roots, the social principle underlying its very essence as an area of creativity in terms of images. All attempts to keep within the confines of aesthetic concepts and ideas in the area of literary theory, as well as in literature itself and in art in general, have inevitably proved short-lived.

However, a "return" to sociology (this article will deal only with some of the approaches that have acquired a certain "stability") does not, in our opinion, find expression simply in a re-emergence of the old simplifications. It is interesting and specific in many respects, the more so for its revealing trends that would depart from "pure sociology" in the direction not only of psychology and anthropology but also ethics and aesthetics. Though these have produced a mixture of the most varying principles, present-day sociologism can hardly be reduced simply to theoretical eclecticism.

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The heightened Western interest in sociological studies in literary theory as well as in other areas of science is due to the mounting social contradictions in the bourgeois world of today. Theoretical thought cannot but take account of the existence of such contradictions and their impact on literature, on art. Hence present-day scholars are trying not so much to substantiate the overall premises of sociological methodology as to evolve concrete approaches to an analysis of literary phenomena in general and of works of art in particular.

A sociological analysis of a work of art that is focused on an examination of the individual's existence in today's world is an outstanding line of seeking in present-day methodology. Having the same object of study, bourgeois and Soviet literary scholars, however, hold positions opposite in principle as regards the points of departure and ultimate conclusions.

It is only in the context of principles underlying the traditions of Soviet literary studies that trends in Western sociology reveal their true place and significance in present-day science. This objective context shows up the groundlessness of claims made by some bourgeois theorists to an innovative "development" of the principles of Marxism.

Present-day Soviet literary studies are marked in equal measure by a striving to apply the results of research in contiguous sciences (and not only in them alone), such as semiotics, mathematics, psychology, and ethics, as well as by a further elaboration of questions typifying the Marxist approach and connected with the specificity of literature.

A focus on an analysis of individual works of art when problems of principle in aesthetics are being dealt with in connection with social and historical problems is traditional in Marxist theoretical thinking, which in its turn is based on the rich experience of the past. One cannot but recall in this context the celebrated correspondence between Karl Marx and Frederick Engels, and Ferdinand Lassalle concerning the tragedy *Franz von Sickingen*, and the important part played by *Anna Karenina* in Lenin's articles on Tolstoy.

Writings on literature by Lunacharsky, Plekhanov, Franz Mehring, and Rosa Luxemburg, to say nothing of the wealth of experience accumulated by Russian revolutionary-democratic literary critics convince us that a broadly conceived sociological approach to literary phenomena and the literary process can be realised in an analysis of an individual work.

Soviet literary studies do not confine themselves to ascertaining how the problem of the individual's standing in society today is dealt with in a work of art, since that task does not fully cover the actual content of writings which, in one way or another, reflect the *dialectic* of historical development (not only social reality, but also the social and ethical humanist ideals that take shape in the historical process). The further development of the principle of historism has gone hand in hand with the enrichment of the sociological method: researchers have tried—this through a detailed analysis not only of content but of form—to reveal the multi-dimensional image of man created in a

literary work, his spiritual and moral potentialities, and the historical perspective depicted by the author in one way or another.

In developing these traditions, Soviet literary studies have concentrated, not only on the way art has reflected the main trends in social life but, in no less measure, on an artistic analysis of man's social and spiritual nature, with special emphasis on the moral problems so characteristic of literature in the Soviet Union and the socialist countries, as well as in realist Western works.

Man as understood in the social sense, not in the anthropological, as an individual created by the entire social and spiritual life—such is the core that shapes in equal measure both form and content in literature. That is why literature belongs to the sphere of sociological analysis.

Literary works reveal social man, with all the variety of his spiritual life, the contradictions between his emotions and thoughts, his relations with society, and in his inner life and outward behaviour. From here derive the links between the individual and the historical conditions of his life, the historical perspective that characterise the social atmosphere, the struggle of ideas, the social clashes; involvement in all these determines the fullness of his individuality, an involvement that is inseparable in principle from the specific mode of artistic cognition. Such are the propositions in Soviet methodology that we shall be drawing on in our analysis of the ideas dealt with in the writings of some bourgeois scholars.

As far back as the twenties, Max Weber found himself concerned not only with the fate of culture and its institutions but also with the fate of human individuals, "the last man of the cultural development" under which all mankind is to perish in an inhuman world: in "soulless experts, and heartless pleasure-seeking men".[1]

This wording is highly indicative: the very mode of expression speaks of that characteristic incursion into the "human", the individually personal sphere, an incursion so close to literature, not into the social proper but the moral and psychological sphere as undertaken by many sociologists of 20th-century culture and art.[2] Illustrative of this is the continuity between the problems dealt with by Weber, as indicated in the above quotation, and the direct development those problems have been given in Herbert Marcuse's *One-Dimensional Man*, which came out 40 years later (1964), and focused on the relations between the individual and society in the present stage of the development of bourgeois society. The same approach has marked works by many other theorists.

"Man in a definite situation —such is the initial formula of any problem raised by Fromm," a Soviet researcher has noted with reference to writings by the well-known US philosopher, psychologist and sociologist. The critic immediately formulates the generalisation that suggests itself: "But exactly the same 'orientation' is in essence followed by fiction which studies various states of the human spirit and thus provides grounds for certain theoretical statements."[3]

In this sense, it is interesting to compare such researches, analogous in aim and method, as Ruth Inglis's "An Objective

Approach to the Relationship Between Fiction and Society," published in the *American Sociological Review*, 1938, (Vol. 3, No. 4) and an article by the contemporary German researcher Walter Nutz, which deals with mass literature, in particular with novels "for women", published in 1965 in the Federal Republic of Germany.

Ruth Inglis's attention is focused on ways of studying the direct reflection of various social phenomena in literature (the "reflection theory") and the backlash from certain literary personages on the frame of mind and behaviour of society, or, more precisely, of certain sections of society (the "social control theory").

We shall not go into the fairly complex and, at the same time, quite naive methods of dealing with the two theories proposed by Inglis, but shall merely note that both in life (more precisely, in that "section" of life she examines) and in literature, she is interested only in what characterises the new condition of "actual" women or literary female characters in their environment or family life, but nothing more.[4]

The Nutz article contains an approach to the problem of the *condition* of the individual today, a problem which, as most essential for "works of genuine literature", orientates, in Nutz's opinion, any level of present-day sociological analyses towards an extension of their boundaries. In dealing with "novels for women" Nutz intends to analyse, not so much a definite readership group as a definite present-day psychology, or, even more extensively, the moral and psychological condition of an individual in the present-day Western world's specific social situation.

Nutz's idea boils down to the following: whatever the level the writer and his reader stand at in present-day "differentiated and disintegrated society"[5], there exists, in the latter,a need to find certain forms of escape from reality so as to make up for the humanity man has been deprived of, in the most primitive as well as most lofty meaning of the concept.

Many Western researchers who base their analyses on sociological principles ultimately agree in their attempts to shed light on this particular problem.

The mounting significance to present-day Western researchers of a detailed analysis of writings will be seen in the editor's introduction to Norbert Fügen's *Wege der Literatursoziologie* (1971), which is devoted to the problem of analysing literary works as a most complex and responsible task of sociological methodology. It is here, according to Fügen, that there appears the urgent need for an understanding of the specific criteria for a given art, as well as for analysis to combine both the value-appraising and the ethically normative approaches, which, on the one hand, reflect the writer's viewpoint as shaped by the ideas of his milieu, and, on the other, the norms and ideas of the readership a literary work is addressed to. However, according to Fügen, all this complex analytical system may be subject to a purely contemplative or impressionist subjectivism unless it is controlled by the objective principle basic in sociological analysis: the revelation, in a work, of objectivised social structures and their interpretation.

Even more decisive definitions, marked by a categorical and utterly frank sociological approach, are to be found in Lucien Goldmann's *Zur Soziologie des Romans*. This author proposes that the contemporary novel should be regarded as a "direct transposition of economic conduct to literary creativity",[6] and, elsewhere; "the homology (correspondence) between the two structures, namely the most important forms of the novel, and exchange in a liberal society, is so obvious that one can speak of a single structure as embodied in two different spheres"; further "... the history of the novel's form which corresponds to the world of reification can be understood only in its link with the history of the parallel, homological and cognate structure of society of reification."[7]

To understand these propositions, which are fundamental in Goldmann's methodology of studying literary works, one should clearly realise what is meant by "economic conduct" and "the world of reification", on the one hand, and the concept of "homology", or "correspondence", on the other.

A great deal of space is devoted by the author to characterisations and arguments which, it might seem, refer to the purely economic sphere. Goldmann writes of the distinction between consumer value and exchange values, of the degeneration of the former and of the significance of the latter as marking a new stage, of their magnificent development, and the like.

In essence, all these pages attempt to ascertain the new status given in present-day capitalist society to human personality, and the disappearance from social life of genuinely moral values and direct human nexuses. It was at the dawn of capitalism that the process began of the replacement of values, as Goldmann points out in making reference to some works by Marx. However, as distinct from Marx in principle, Goldmann reduces to that process the entire content of 20th-century social life.

To Goldmann, economic processes are interesting as factors determining the changes in the relations between people; it is an atmosphere which, as it were, is absorbed by members of a given society and—partly subconsciously and partly voluntarily or enforcedly—gives shape to social and personal life, behaviour, consciousness, and artistic creativity.

"In a society which has taken shape in the predominant part of present-day social life, the threat exists of the disappearance of all genuine relations between man and things, or among people, as based on the qualitative properties of things or man-created. These natural relationships will yield place to mediating and degraded relations and exchange values. Of course, use-values do not disappear... but their impact is exerted below the surface, outside of the consciousness, just like the existence of actual values in the world of the novel."[8]

Goldmann's direct address to the economy might not, as we see, be so straightforward in fact. His socio-economic definitions are an attempt to understand the present-day man's socially and spiritually determined condition, but at the same time completely or almost

completely outside the actual historical process, the struggle between ideologies and ideological seekings.

Goldmann's failure to understand the ideological and philosophical aspect of creativity and part played by ideological and political processes in history itself is, in our opinion, a manifestation not only of a vulgar sociologism but also of a kind of social pessimism, which, by leading Goldmann into contradictions, at the same time determines the critical notes in respect of present-day imperialist society, which are to be heard in many of his appraisals.

In his consideration of the new features in the economic structure of present-day capitalist society from the angle of the condition (the condition and not simply the external position) in which present-day man finds himself, the researcher thereby and in a certain sense complicates the direct relation between the novel and society's structure, the relation which he himself has proclaimed. In essence, he analyses the "homology" between man's new socio-psychological condition and the new forms and contents of the novel as engendered by the selfsame social and psychological premises. Goldmann is convinced that it is this relationship that makes it possible to speak about the realism of a number of works. His understanding of the latter contains a number of simplifications stemming from his distorted idea of historical and literary development. However—and this should be emphasised as a feature of the present-day sociological conception—no assertion that the novel is lifelike photography and an exact reproduction of empirical "features" of a given social system is contained in Goldmann's theory, which deals with a correspondence, a similarity, between the novel and society at the structural level, and not in the sense with simple registration or photography.

Incidentally, the so-called vulgar sociologists of the twenties, at least those who can be considered scholars, did not attach that meaning to the concept. V. Friché, for example, defined the sociology of art as a science establishing the "law-governed link between certain types of art and certain social formations"[9] (a certain link but in no way some mechanical coincidence).

But let us return to the "precise homology" between society and the novel as established by Goldmann. In developing his proposition, he has discerned a most important thing, namely, that literature contains social truths that are not on the surface but lie deep in social life. It can be shown fairly simply that the life-story of a character in a novel and the world that surrounds him reflect present-day society more or less, but, Goldmann emphasises, that does not exhaust or even lead up to the tasks of sociological analysis. What he is interested in is the link between the novel and the essence of the social formation, which the researcher should ascertain: that link is determined, not by the presence, in a novel, of "similar" facts and topical ideas, which are identified by certain naive vulgarisers with the content of a work.

That link reveals itself in a profound structural shift which affects the entire artistic system in a novel and leads to the organisation of a special dialectical structure which is present in novels produced in

different countries and cannot be considered "invented" by any particular writer.[10] A striving to grasp the essential features of present-day bourgeois society and, at that level, to seek for homology with works of art also under examination not in their empirical features but in the sum of essential and common features perceived by the researcher as a definite unity—all this approach cannot but be seen as a strong point in Goldmann's method. The approach raises Goldmann above sociologists of the positivist persuasion, yet this does not justify his claim to develop Marxism.

However, Goldmann's attempt to show how and in what new artistic qualities of the novel manifest themselves today produces a pallid impression of the stereotype: he establishes the disappearance of the main character's life-story and sometimes his very absence; he discerns a non-organised composition, a rejection of the forward-moving development of the plot, a kind of cult of movable property, and the impossibility, in principle, of a positive main character in a story or of a direct establishment of genuine values. In all this, the researcher reveals no originality: the new structure of the novel which he has defined has already been frequently described by those who have created and studied the structure of the modernist novel in its different varieties, namely those by Kafka, Camus, Robbe-Grillet, Sarraute, i.e., the same list of names which most Western scholars see as the leading representatives of the new forms and structures of present-day literature.

It is with greater dramatism than other researchers do that Goldmann is able to explain and convey the "abnormality" of a type of novel that contains the actual truth about existent society, a novel he considers the logical offspring of art today.

The specific structure of the modernist novel corresponds, in Goldmann's opinion, to a social structure and a type of consciousness in which transient values are elevated to the rank of absolute values: money and social prestige have become absolute values; values of liberal society which were stable in the past, such as liberty and equality in France, the ideal of education in Germany, as well as such concepts as tolerance, human rights, the development of personality and the like can no longer lay claim to universal significance and have become qualities of individual consciousness. A situation characteristic of the present stage of society's development has arisen, in which economic activity is predominant, while collective consciousness, in the first place, any negating thought: ideology, culture and politics standing in opposition to existing society (including the struggle of the proletariat, which, in agreement with other bourgeois theorists, Goldmann considers as united with that society at the present stage) have lost all force and strive to "become a simple reflection of economic life, or to disappear in general".[11]

That is how Goldmann describes the deformation or the complete disappearance of actual processes in the social, spiritual, and literary life of the world today. An historical reality that is difficult and full of contradictions is sacrificed to a quite banal sociological scheme. Such

pages are numerous in Goldmann's work, yet his stand is a contradictory one. On the one hand, he declares that his research is aimed at establishing a homology between the novel and the essential truth of present-day society, i.e., the loss of genuine values, the disappearance of collective consciousness and the alienation of the individual, who is crushed by the world of "reification"; on the other hand, the monograph is imbued with the idea that "use"-values, consciousness orientated towards these values and relations between people continue to exist and are even building up their influence.

Thus, on the one hand, the novel of today is borne of the present-day society and "transparently transposes"[12] its antihuman essence; on the other hand, it is the outcome of an individual artistic consciousness which, in principle, is orientated towards genuine values and stands opposed to collective non-spirituality, thereby bearing within itself an element of negation of the existent: an important work can appear only as a product of purely individual consciousness. The novel asserts itself in the measure in which it can represent and develop a striving towards a direct orientation towards qualitative values, but on the condition that a striving towards genuine values will be emotionally moderate, non-conceptual and not insistently formulated.

Given that condition, Goldmann is even ready to acknowledge that a striving towards the positive as embodied in a work of art gives expression, not only to a single individual consciousness but also to a kind of "community". Since, as he declares suddenly (yes, suddenly in a polemic with himself), people's deprivation of qualitative values and the "disappearance" of collective consciousness come into such patent contradiction with all natural (psychological and biological) requirements in man, that gives rise to a more or less strong reaction of resistance, which may create the social foundation for a novel to appear.

Goldmann makes the immediate reservation that this thought is no more than a hypothesis which calls for confirmation, etc. However, there does exist an attempt to escape from the impasse created by the "bringing into line" of the novel with the "essential" processes of imperialist society. Characteristically, this attempt is guided by an interest in man's fate today and a recognition of his abnormal relations with society. In this, Goldmann proceeds, not from an abstract "norm" but from a social experience which he sees as normal, namely, the experience of preceding epochs, when man could and had to orientate himself to use-values and defend his individuality. With Goldmann, the search for the socially positive is linked exclusively with the past, which does not preclude the significance of those of his arguments which speak of the need to seek for an alternative and not to remain fixed at a negative stand. It is in these seekings that Goldmann's theory has some points of contact with searches after social truths, which we can see in realist literature and the kind of novel which this scholar does not recognise either as contemporary or realistic.

Despite the glimpses of insight revealed in *Zur Soziologie des Romans*, its main characteristic is the revelation of the inevitability of art being swallowed up by the predominant system of social relations.

The conception of modern work of art as developed by Goldmann is not identical with but somehow resembles the views of Th. Adorno, who, in even greater degree than the theorists mentioned above, is convinced that present-day art—inasmuch as it remains present-day and not "degraded," "illusory," and "romantically rootless", can follow no other path than that of an unqualified merging with the disharmony of a "de-humanised" world. The latter can be "mastered" in terms of art only through the creation of an even more inhumanly destructive structure than his own: "the only works today that can be considered as such are those which are non-works...."[13]

This proposition of the author of *Philosophie der neuen Musik* means that the artist today needs no ability to create works as integrities which establish a definite stand and orientation by a creative personality (and thereby influence man in general) in today's world. That artist does not need any cognition or, to be more precise, any recognition not only of objective and law-governed patterns but of any organisation in general as inherent in that world. In Adorno's opinion, any kind of art which cannot take up that stand is illusory and doomed to degradation, since, in expressing an illusion of faith and humanity, a work expresses nothing more than a "solitary note" of anguish or despair, a "unit" that nothing and nobody stands behind.

We can see that, with Adorno, the question of art and society comes into close contact with the problem of the position of man and personality in the world of today. As with Goldmann, he attaches prime significance to the question: what and who stand behind the theoretically and logically abolished but practically still vocal "notes" of anguish (not only in Thomas Mann's "degraded" novels but even in the "modern" works of Kafka or Camus), of despair and rejection of relations between people, based on "exchange values", "reification" and other principles built into that structure?

In essence, neither Goldmann nor Adorno provides replies to this question: they themselves do not regard as a reply any attempt to ascribe the entire artistic experience of the 20th century (with the exception of the "works that are non-works" of the extreme modernists) to an experience that embodies either "archaic consciousness" or else one that is merely "individual" (i.e., degraded).

Of course, Goldmann does not see things in a light in which works orientated towards "former consciousness" (i.e., democratic and humanist principles) have automatically disappeared in today's world but he does allege inevitably weakening or lacking future for the tradition stemming from the social novel of the past century.

In an attempt to draw some conclusions, we shall repeat that the views, not only of Goldmann but also of other representatives named above or not mentioned there, of present-day sociological literary criticism abroad one can see an obvious striving to draw closer to the actual situation determining processes in literature, in social life and

man's psychology in the Western world. On the other hand, however, the selfsame Goldmann excludes from his field of vision those literary works which give an objective or at least a many-sided depiction of reality and man, i.e., works by realist writers in the traditional and genuine meaning of the term. He denies to such works what is most important: a correspondence between the world and people they depict and the essence of present-day man's actual life and condition. Goldmann (like Adorno and other theorists) sees a correspondence between the real world and the artist-created in works by writers who, both subjectively and objectively, are far removed from any depiction of actual life in its variety, fullness and complexity. This "invertedness" of ideas, strange yet one that is specific in present-day sociologism is, as we have already said, linked with a narrow and simplified understanding both of the literary and historical process.

In his consideration of the structure of the present stage in the development of bourgeois society, Goldmann also sees in the structure of work of art, first and foremost, a hemmed-in, static and hypertrophied depiction of some single aspect of man and the world about him; of course, he does not perceive (on the plane of a correspondence to the structure of the actual world) the dialectically mobile, multiple and open structure of realistic works.

His methodology has been very justly criticised for the oversimplified and linear correlation: social structure—a work of art. With equal justice, attention has also been focused on his having insufficiently taken account of, and sometimes ignored, the creative individuality in writers, which has actively transformed an ability to artistically depict life, and in general the operation of the subjective factor in art.

As we see it, all this is an effect—not a cause, of the weakness in his methodology, which consists in the following: with all the attention given to man on the social and ethical plane, historical man has proved to be a "missing link".

Of course, social man should not be contraposed to historical man. Nevertheless, this does not mean playing with concepts but a quite real differentiation which has a direct bearing on the methodology we are interested in.

That is because man, as placed in a particular social situation, is at the same time not limited to its confines: he is also inescapably linked both with the past and the future, and not merely through the succession of generations. No man exists who does not engage in recollection and aspirations, which he inevitably correlates with definite social habits, ideals and aims, thereby involuntarily linking himself to the imperceptible but inexorable historical dynamism which, as though accumulating its energy, fulfils itself, not only through major upheavals and shifts but also in the quiet pulsation of day-to-day changes in personal lives, individual stands and sentiments. It is this micro-scale history (which does not preclude immediate contacts with History with a capital letter) that is taken into account by art, as specifically distinct from all other forms of

ideology. Outside of this, no sociological analysis of a work of art can be effected.

Literature discerns the social micro-scale dynamism in which the dialectic of History is materialised, as it were, and, if it may be put that way, finds its ultimate projection.

After all, art, in its own language, in mediated and individualised forms, is able to narrate how, at any moment of historical development and at any of its stages, new phenomena both in social and spiritual life are born and develop: "... within the old society elements of the new are formed,"[14] even at times which might seem most stable and calm.

In various ways and degrees, literature takes as its object not only predominant social relations and ideas but also the potentialities within a given class formation, that which is destined to take its place, and that which is concealed deep within it. This ability of literature is in essence a realisation of its humanist core.

But let us return, in the light of the above, to a question which has been given no reply either by Goldmann or other present-day Western sociologists: who and what "stands" behind the "notes" of non-acceptance of a reified society, which are to be heard in literary works. It can be said emphatically that the question can, in principle, be resolved only in sociological analysis, in the scientific meaning of the term. That reply will run as follows: behind what would seem to be a solitary and "single" non-acceptance or even merely inner opposition, there "stands" not a degraded consciousness but the dialectic of historical development in the specifically human aspect comprising the core of a work of art.

Any sociological analysis carried out outside of that "core" inescapably leads to an impoverishment both of the content and the form of a work of art.

Present-day sociologism abroad is interesting and instructive in the sense that, in works of art, it seeks for a reply to the question of the condition of man as immersed in the situation in present-day "post-industrial" society. However, by isolating the sociological principle from historism so intimately bound up with it, Western sociologists have, in fact, barred themselves any access to works of present-day literature containing a reply to this question, which presents such keen interest to them.

Present-day realist artists, who give effect to their principles of cognising the world about them through the medium of the artistic system in their work, understand man's possibilities, his place and role in history in various ways, but they all agree that man is capable not only of defending himself but of attacking the foundations of a dehumanised society. It is in that light that the problem of man arises in the works of the West's major realist artists; that is how such works are read by present-day Soviet researchers. Moreover, despite all their interest in it, that is a problem that cannot be solved by present-day literary critics abroad who, in various ways and at various levels, are "returning" to a sociological examination of works of art,

but still have not mastered the strongest aspects of that methodology which has to its credit many glorious traditions and is constantly enriching and perfecting its principles.

NOTES

[1] Max Weber, *Gesammelte Aufsätze zur Religionssoziologie*, Vol. I, Tübingen, 1920, p. 204.
[2] See Gertraud Korf, *Kritik der Kulturtheorien Max Webers und Herbert Marcuses*, Berlin, 1971, pp. 16-17.
[3] P. Gurevich, "Erich Fromm's Anthropologism as a Problem of Aesthetics", in the collection: *Theories, Schools.- Conceptions*, Moscow, 1975, p. 177 (in Russian).
[4] Inglis's article is quoted from the collection *"Wege der Literatursoziologie"* (Soz. Texte, 46), Berlin, 1971, p. 165.
[5] *Wege der Literatursoziologie*, p. 244.
[6] L. Goldmann, "Zur Soziologie des Romans" *Wege der Literatursoziologie*, p. 200.
[7] Ibidem.
[8] Ibid., pp. 198-199.
[9] V. M. Friché, *The Sociology of Art*, Moscow-Leningrad, 1926, pp. 7, 10 (in Russian).
[10] See L. Goldmann, *Zur Soziologie des Romans*.
[11] Ibid., p. 203.
[12] Ibid., p. 197.
[13] Th. Adorno, *Philosophie der neuen Musik*, Fankfort on the Main, 1962, p. 35.
[14] K. Marx and F. Engels, *Werke*, Vol. V, p. 480.

The Conscious and the Spontaneous in the Interaction Between Society and Nature

IVAN LAPTEV

The present epoch witnesses a new state of the interaction between society and nature, which is characterised, on the one hand, by man's growing possibilities for remaking nature and, on the other, by the still mounting ill-effects of his production activity. The problem of utilising nature is increasingly displaying its link with social development and becomes more and more pressing with scientific and technological progress. The scientific and technological revolution is opening up the possibility for harmonising the relationship between man and nature and, at the same time, further aggravating the ecological danger, depending on what action mankind will take to utilise nature and what strategy it will evolve in its interaction with the environment. At the 25th Congress of the CPSU, the General Secretary of the CPSU Central Committee Leonid Brezhnev said: "...there are different ways of using nature. One can leave in one's wake barren, lifeless expanses that are inimical to man—the history of mankind knows many such examples. But, ... it is possible and necessary to improve nature, to help it unfold its vital forces more fully... This is our, socialist way."[1]

The quest for the optimal strategy of such interaction is a major methodological problem, whose possible solutions affect the fundamental principles of the organisation of knowledge and material practice. One of the key orientations of this methodological quest is the study of the relationship between conscious and spontaneous factors of production activity that is reshaping nature. A methodologi-

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cal solution of this problem requires recourse to the propositions and conceptions evolved by social and natural scientific thought, and the detection of the specific correlation of conscious, expedient and spontaneous accompanying factors of using nature today.

The method for studying the relationship between the conscious and spontaneous in the interaction between society and nature is determined in some propositions of the classics of Marxism-Leninism. These propositions reveal the reasons for the fundamentally inevitable growth of the spontaneous effects of the expedient reshaping of nature under capitalism, effects that reach such proportions that they call in question the reasonable results of human activity. These propositions clearly note the possibilities for harmonising interaction with nature under communism.

In natural-scientific thought the most fundamental conception of this problem was put forward by V. Vernadsky. It contains a number of propositions that have not lost their constructive significance and allow obtaining some methodological results (see "Vernadsky's Theory on Noosphere" in *Social Sciences*, No. 4, 1975).

The specific character of the present epoch is to a large extent determined by the qualitatively new role played by man in remaking and promoting nature. The dialectical process of humanising nature, always limited by the degree of its actual involvement in object-sensory activity, today embraces the entire planet and compels science to study natural history and historical nature[2] more closely. On account of the unprecedented growth of the power of man's influence on the environment, in the epoch of the transition from capitalism to communism, which is giving people the possibility of applying this power adequately to human nature, the interaction between society and nature acquires a new quality.

A fundamental distinction of the present interaction between society and nature is that this process clearly shows the leading role of conscious human activity directed towards the expedient reshaping of the biosphere (with the spontaneous effects of human activity simultaneously evolving into a powerful factor), whereas at preceding stages of interaction natural evolution was the main factor changing the biosphere. The profound changes taking place in nature are making it obvious that both society, which interacts perpetually with nature, advances from one stage of progress to another, and nature, which has been subjected to increasing human influence ever since the emergence of society, steadily ascends to a new level. Man's conscious activity thus plays a growing role in the development of nature.

THE PRESENT STAGE OF THE PROBLEM OF "MAN AND THE BIOSPHERE"

By converting nature into an object of expedient production influence, man gradually acquires new functions in regulating natural processes, functions that spring from his ability to reshape his natural

environment consciously as a result of his highly developed consciousness and social essence.

This qualitatively new role in changing and developing the biosphere has been implicit in man from the very first days of his history. At the different stages of history this role has manifested itself in different volume and forms. At the early stages of history human activity was a factor changing the local ecological systems and, by its external manifestations and results, differed insignificantly from natural processes and phenomena (for instance, the influence exerted by animals). But with the growth of the productive forces and of man's transformative activity this factor grew more and more distinctly into a regional and then a global factor of the environment's evolution. An idea of man's increasing influence on nature may be obtained from the single fact that at least four cubic kilometres of rock are brought to the surface annually by the mining industry, builders of dams and canals and the metallurgical industry; by tilling the soil people move a mass three times larger than the quantity of all volcanic products rising from the bosom of the Earth; mankind operates capacities of a power of nearly 10^9 kw in the shape of long-term sources of energy—this magnitude can be compared with the energy of the processes developing on the surface of the Earth, in the atmosphere and in oceans.[3] In the 19th century alone, mankind extracted and released from their natural links 22,711,000 tons of lead, 11,373,000 tons of zinc, 10,679,000 tons of silver, 11,500 tons of gold and 27,500 tons of aluminium.[4] In the 20th century there has been a larger growth of the utilisation of all minerals (in the case of some metals—1,000-fold).

Today man is exercising an increasing influence on basic geochemical processes in the biosphere, not merely consuming but also annually redistributing reserves of chemical elements accumulated by nature in the course of millions of years. There are serious grounds for noting that as a result of human activity new concentrations of elements are being created in unnatural combinations.

The present, qualitatively new period of the interaction between man and nature is witnessing man's conversion into a global factor changing his environment, on top of which man is going beyond this environment, into outer space, and beginning to tap a source of energy that is not typical for the biosphere, the energy of the atom, and acquiring control over natural forces of a tremendous transformative potential. The "second nature" created by man is such that it gives the illusion of society's virtual independence of "its own nature", of the biosphere.

Man's appearance in outer space and the creation of artificial materials and products are unquestionable evidence of a new stage of man's freedom. However, the contradictory character and specific limitations of this freedom are likewise evident; the gigantic labour modifying man's natural environment and this labour's growing efficacy must not call in question the fact that mankind is indivisibly linked with the biosphere—with the system of natural conditions in which human life was born, developed and proceeds. The artificial

materials and products comprising man's so-called artificial environment cannot change his own dependence on the conditions existing in the biosphere. By replacing various resources with the aid of artificial materials man strives, above all, to preserve the stability of his vital conditions and, ultimately, of the biosphere. By switching from the natural resources of the biosphere to artificial resources, to resources of a secondary order, man does not exclude himself from the natural environment and does not reduce his dependence on it.

This leads to the paradoxical circumstance that even if man settles in other planets he cannot break away from terrestrial conditions if, of course, he does not find a planet identical with the Earth and does not adapt himself to the new environment. However, the former contingency is still very problematical, and the latter is hardly possible, for time exceeding the history of society is required to adapt an intricate living organism (man, as the summit of nature's evolution, is obviously one of the most intricate organisms currently existing on Earth) to a fundamentally new environment. This means that even on his longest journeys man will take with him his native biosphere—the environment of his existence, and this environment will fence him off from other worlds.

Even in outer space people continue to live and work in an artificially created terrestrial environment. While breaking away from the Earth man cannot break away from the biosphere. "As living matter," Vernadsky wrote, "mankind is linked inseparably with the material-energy processes of a definite geological jacket of the Earth, with its biosphere. It cannot be physically independent of it for any length of time."[5]

To a certain extent this fundamental methodological proposition applies to inorganic matter as well. For instance, when instruments and apparatuses are sent to outer space or other planets they are in most cases provided with almost terrestrial conditions of work: the appropriate pressure, humidity, temperature and gas composition of the air are created for them. This is inevitable, for apparatuses are made on Earth; they transmit information that can be understood only in comparison with information about the Earth; they are made of terrestrial materials, whose properties, largely determining their work, are discovered by people in terrestrial conditions. Non-living matter can, of course, exist outside the natural conditions of the planet, the destructive, stabilising or restorative actions of whose components are taken into account by man in the creation of this matter, but ultimately even it ceases to exist as terrestrial matter. We still cannot say definitely what will become of the materials from which artificial satellites and spaceships are made after a long stay in outer space or other planets, what new qualities they will acquire and which of the qualities known to man they will lose. One thing is certain, and it is that in any part of the universe nature must of necessity reshape any matter in accordance with "local" conditions. Terrestrial machinery unquestionably can perform certain work outside our planet's limits, but it may be surmised that its existence,

as the existence of man, is likewise linked with the biosphere despite the fact that machinery is not part of the living world.

In our opinion, the understanding of man's "independence" and "liberation" from nature as a possibility of excluding the human organism from the operation of the biosphere's mechanisms has a false meaning. Nature's subjugation, domination over it and independence from it are achieved only on the immutable condition that by subjugating and dominating nature man maintains the vital conditions of the biosphere and remains subordinate to it. Any reduction of people's direct dependence on nature enhances their mediated dependence on it; for instance, the disappearance or exhaustion of any chemical element or material resource immediately influences human culture and generates a complicated and far-reaching reaction in it.

Man's growing domination over nature is only evidence of the development of his interaction with nature. We believe that the mutual dependence and mutual link of the changes in society and nature should be borne in mind when we consider the prospects for the biosphere's progress resulting from the activity of man as a "new geological element".

THE THEORIES OF V. VERNADSKY AS A STAGE OF THE STUDY OF THE CORRELATION BETWEEN THE SPONTANEOUS AND THE CONSCIOUS

The qualitative uniqueness of man's influence on nature and his habitat created as a result of this influence are mirrored in many materialistic theories, including the theory of the noosphere. The latter theory reflects key aspects of human activity: conscious and expedient social influence on nature, the great role of cognition and its achievements in enhancing the efficacy of this influence, the qualitative distinctions between the results of human activity and what has taken shape through the biosphere's natural development.

There is a fundamental distinction between the materialistic and the idealistic conceptions of the noosphere. The creators of the latter conception, Edouard Le Roy and Pierre Teilhard de Chardin, regarded the noosphere as an ideal formation, as the planet's "envelope of thought". "Only one interpretation, only one name can express the great phenomenon known as the noosphere," Chardin wrote. "As vast but... much more integral than all the preceding covers, it is indeed a new cover, a 'thinking layer', which, born at the close of the Tertiary, continues to unfold over the realm of plants and animals—outside and over the biosphere."[6]

According to the materialistic theory, the noosphere is not a "thinking layer" unfolding over the planet through the mind of man, outside the biosphere and belonging entirely to man, but a stage in the development of our planet itself, in development promoted by man as the focus of the "maximum effective energy" concentrating in the biosphere.[7] "Humanity as a whole," Vernadsky wrote, "is becoming a

powerful geological force. Its thought and labour are being confronted with the problem of restructuring the biosphere for the benefit of freely thinking mankind as an integral whole .... The noosphere is a new geological phenomenon on our planet."[8] Vernadsky considered this problem mainly from the viewpoint of natural science, saw the formation of the noosphere and, consequently, the harmonisation of the relations between society and nature as a natural-historical process, as largely a spontaneous objective process. But the qualitatively new stage of the biosphere, or "the latest of the many stages of the biosphere's evolution"[9], was, in his opinion, due to human activity pursuing its conscious aims in the process of remaking nature.

This is borne out also by the fact that the boundaries of the noosphere do not coincide with those of the biosphere. Products of intelligent human activity (rockets, satellites, spaceships) penetrate beyond the planet's limits; man-made machinery goes from the biosphere into the planet's lower-lying envelopes. All these elements of "second nature", created by human labour, are relatively autonomous, and this enables them to go beyond the biosphere. On account of all these elements, the noosphere, as a state of the biosphere, also spreads beyond the biosphere's limits. This non-coincidence of the frontiers of the noosphere and biosphere is to be observed in the tendency, implicit in the primary biosphere but manifesting itself to the greatest degree at the stage of the noosphere, towards maximum manifestation and dissemination, a tendency that is unprecedentedly stimulated by man, the main motive force of the noosphere.

As a result of a long process of remaking its environment, human society is converting the biosphere into a noosphere. "In the biosphere, i.e., in the Earth's upper cover," Vernadsky wrote, "human society is becoming a unique agency. It alone is changing the biosphere's very foundations in a new way and with growing speed." Consequently, mankind is the principal motive force of the natural process, a "great geological and, perhaps, cosmic force".[10] In this context, the idea of the noosphere presupposes a transition from a largely spontaneous transformation of nature into purposeful control of its processes, of the development of the biosphere as a whole. Since every expedient influence on nature has hitherto been accompanied by a series of consequences, sometimes favourable, at other times indifferent, and over the past few decades increasingly harmful to man (which to a large extent burdens the entire process of the interaction between society and nature with elements of spontaneity), the conception of the noosphere presupposes a transition from such to more harmonious interaction. In keeping with this conception, man comes forward not as a global natural force that in many ways spontaneously influences the development of the biosphere, but as a force rationally organising its own interaction with nature, consciously directing the biosphere's development and regulating the dynamic character of its processes.

The formation of the noosphere in the process of mankind's interaction with nature marks the beginning of the transition from the spontaneous form of the process to conscious guidance of it. In the theory of the noosphere this transition is itself regarded as a result of the spontaneous realisation of the conscious aims of human activity. Although the dialectical unity of man and nature is expressed in material practice (which is an objective social need and becomes a constant factor influencing the development of the biosphere and its elements), the conscious factors of this activity still do not give the interaction between society and nature the character of a consciously guided process. Production activity gives nature only a specific possibility for unlimited development.

This is seen very clearly if we consider human activity not by contrasting man with nature, when nature is regarded merely as the environment of man's existence and human activity as a process of reshaping and utilising this environment, but from the standpoint of the unity of man and nature. In this case human activity is seen as an interaction between the part and the whole determining the development of the whole. Through human activity nature unfolds its possibilities, the infinite number of its manifestations, more fully and broadly. But in order to avert dangerous spontaneity in the interaction between society and nature, this entire process, and not its individual (though basic) elements, must be placed under man's conscious control and guidance.

With the development of society's productive forces human activity and its products exercise an increasingly perceptible influence on the course of biospheric processes, and mankind's role as a new geological force is displayed more and more distinctly. Today the influence of this force on the biosphere must be assessed as being largely spontaneous, but in the long term, with the appearance of the possibility of controlling mankind's interaction with nature circumspectly, expediently and in accordance with an integral programme, it will increasingly acquire a conscious character, speeding up the biosphere's transition into the state of noosphere. This aspect reveals mankind's remarkable role as a unique agency in the biosphere.

According to the Vernadsky theory, the emergence and development of the noosphere is a process of the development of the biosphere, accelerated and controlled by an intelligent natural being, by man.

Here we must underscore Vernadsky's words that "an immense future is unfolding for man in the geological history of the biosphere if he will understand this and will not use his intelligence and labour for self-annihilation".[11] Man can appreciate this only if he has a social organisation that gives freely thinking mankind the possibility for harmonious development. The establishment of this society throughout the planet will be evidence not only of a high level of development of the productive forces but also of mankind's unity.

SOCIAL PROGRESS AND THE HARMONISATION OF THE RELATIONSHIP BETWEEN SOCIETY AND NATURE

As visualised by Vernadsky, the harmonisation of the relationship between society and nature requires "mankind's manifestation as a single whole" and conforms to the "unity and equality of all people" [12]; this, Marxist-Leninist philosophy tells us, is attainable only under communism. According to Marxism, "for the socialist man *the whole of so-called world history is*... the shaping of nature for man", while communism spells out the "*genuine* settlement of the contradiction between man and nature, and between man and man". [13]

Marx held that the entire movement of history, the entire process of the formation of human society is an act of the birth of communism. The settlement of the contradiction between man and nature, which grew unprecedentedly acute already in the early decades of the 20th century, is dictated not only by the need for social development. In the epoch of the scientific and technological revolution important natural reasons are also taking shape, making the harmonisation of the relationship between society and nature indispensable: the growing spontaneous consequences of production activity, which erodes the basic, "framework" processes of the biosphere, are already today becoming dangerous and compelling mankind to think of the biosphere's future and, consequently, of its own future.

It is today being universally recognised that the settlement of the global ecological problem requires the concerted efforts of all mankind. In the 20th century man has to understand for the first time in his history that "he is an inhabitant of the *planet* and that he can and must think and act in a new aspect, not only in the aspect of a separate individual, family, clan, state or union of states, but in a *global aspect*". [14]

But this harmonious unity of mankind does not mean a mechanical bringing together of socio-economic forms of different levels and different orientations within the framework of comprehensive international programmes (ecological, demographic, food, and so on), although such programmes are crucial for lessening the acuteness of the present-day ecological problem. For mankind's harmonious unity in the true sense of the word it is necessary to reshape the world socially and level up the development of the different parts of mankind and thus make it possible to harmonise the relationship between man and man in a communist society. The world's social reorganisation can and must lead to the elimination of mankind's spontaneous development accompanied by spontaneous unfavourable consequences for both nature and man, and turn it into conscious, guided and expedient development accompanied by similarly conscious and expedient interaction with nature and guidance of the processes in the biosphere.

Significant in this respect is a proposition formulated by Marx in a letter to Engels of March 25, 1868, in which he commented on Fraas' *Climate and the Vegetable World Throughout the Ages, a History of Both:* "The conclusion is that cultivation when it progresses spontaneously and is not *consciously controlled* (as a bourgeois he of course does not arrive at this), leaves deserts behind it—Persia, Mesopotamia, etc., Greece. Hence again an unconscious socialist tendency!" [15] With these words Marx was, in effect, the first to record the unity of two processes—human society's advance towards communism and the development of forms of interaction between society and nature which today can be successful only on condition natural processes are guided consciously—by plan and expediently.

In considering the prospects for harmonising the interaction between society and nature Vernadsky visualised the future of our planet and of man quite definitely and optimistically. He wrote: "Today under the impact of the horrors of life around us... we hear talk of the approach of barbarity, of the downfall of civilisation, of the self-destruction of mankind. It seems to me that these moods and judgements spring from inadequate knowledge of the environment.... I look upon it all from the standpoint of the noosphere and believe that mankind's new, happy future will be born spontaneously in storm and thunder, in horror and suffering." [16] Here the word "spontaneously" has only one meaning, namely, "objectively, naturally". It will be recalled that Marx, too, wrote that society's development is governed by laws which not only are independent of the will, consciousness and intentions of man, but themselves decisively determine his will, consciousness and intentions.

It is also important to note the specific understanding of man's domination over nature under communism from the standpoint of the correlation of conscious and spontaneous factors in the interaction between them. In characterising the essence of man's power over nature, Engels wrote "that all our mastery of it consists in the fact that we have the advantage over all other creatures of being able to learn its laws and apply them correctly". [17] The building of the communist society signifies the creation "of complete essential unity of man and nature, the genuine resurrection of nature, materialised naturalism of man and the materialised humanism of nature". [18]

Under communism man will not dominate man and he will not dominate nature, as this is understood today. In the interaction between man and nature a mounting accent will be placed on the utilisation of nature's internal dynamics, on the rational guidance of its processes. Production based on this development of the external world will show man himself not as an "animal making implements" in order to use them to gain mastery over nature, but as nature's highest creature, and by virtue of this as its real creator, the summit of natural history, the apex of a pyramid whose foundation man must constantly safeguard and strengthen in order to rise to new heights and continue his development. The problem of the interaction of society and nature is seen increasingly as a problem of man. Our knowledge of nature cannot be comprehensive enough, profound and adequate if man is removed from and set against nature; in turn, if nature is set against man our knowledge of him will be alien, "dead" and subordinate.

The present is not only a period of man's increasing practical use of nature but also a period of his unity with nature. But to achieve this man has to be "master of his own social organisation" (Engels), shape it in such a way as to enable the interaction between society and nature to improve with an eye to long-term effects, in other words, he has to build a society conforming to his power. This is the only society that allows him to take into account the limits of the possible in nature, and not only his own aims.

It is not accidental that the unique character of the present period of the interaction between people and nature manifests itself most strikingly in the socialist countries, including the Soviet Union. A huge contribution to the harmonisation of the socialist way of utilising nature was made by the 25th Congress of the CPSU, which adopted a comprehensive programme for the protection of the environment, the rational use and reproduction of natural resources, the development of the latest means of studying them, the creation of advanced technologies and highly efficient machinery for the cleansing of waste, the improvement of methods of forecasting the influence of production on the environment, and so forth.

It must be noted that all these measures are components of an integral system for the planned harmonisation of the socialist way of utilising nature. A fundamental characteristic of this way is a comprehensive approach in all areas of human activity, aimed at remaking the environment, shaping new criteria of economic and social progress, and making new demands on science and technology. As a result, man's understanding of the world is today undergoing definite changes, and this cannot but exercise a reverse impact on the character of man's attitude to nature, on decisions to influence this or that natural resource or process. The conscious regulation of the social utilisation of nature and, consequently, of the transformation of nature as a whole is becoming an increasingly effective factor of its development.

Social progress provides social conditions for harmonising the relations between society and nature, and it does this not by itself, not automatically. Of course, a harmonious link between society and nature presupposes a level of society's improvement that enables man to organise and implement a reasonable attitude towards nature. Because these conditions have yet to be created the steadily growing dimensions of man's interference in the course of natural processes are alarming mankind more and more. Today scientists are compelled to say over and over again that it is important to protect us from ourselves, that it is vital to teach man, who is acting as a predator and squanderer in the full sense of these words, to show respect for his environment, particularly for natural resources, which are his main actual wealth.[19]

At any stage of human history society's possibilities for influencing nature, for remaking it objectively are determined by the state of the productive forces, by "second nature's" development level. The realisation of these possibilities and the methods of using natural wealth depend largely on the socio-economic relations. Social

relations help man to adopt a reasonable attitude to nature today, when the scientific and technological revolution has opened up real possibilities for this or, on the contrary, prevent him from adopting such an attitude. Of course, every society must reckon with and be guided by the laws of nature, but if society sets itself solely narrow utilitarian aims, "develops technology and the combining together of various processes into a social whole, only by sapping the original sources of all wealth—the soil and the labourer",[20] it may upset the reproduction of natural conditions and create a dangerous ecological situation.

The scientific and technological revolution releases man from the routine of production process and allows him to perceive surrounding reality more profoundly and see the objective tendencies of social progress, the results of his activity in nature's system. However, as a specifically human attitude to nature, production signifies not only productive forces and technology but also the principles of applying them and the interests determining this application. While changing the means of developing nature, the scientific and technological revolution does not by itself change the aims of this development or the principles of society's use of the material world and its attitude to the environment. The capitalist world uninterruptedly rejuvenates and stimulates a consumer attitude to nature, reduces it to the role of an object of unrestricted exploitation and uses it chaotically, being guided chiefly by the profitability of developing one resource or another.

The basic contradiction of the present epoch is bared for us in a new light. Communism shows us yet another aspect of its historical mission, that of saving not only man but also nature.

The harmonisation of the relations between man and nature is a socially determined process. Its successful advancement depends on how effectively the numerous problems of the present phase of the interaction between man and nature are resolved. Since there is growing awareness today of these problems and the adverse change of the biosphere has not yet gone irreversibly far, it is in man's power to correct the orientation of this process towards a reduction of the role of uncontrollable factors changing the biosphere, towards the conversion of these changes into a consciously guided process.

The surmounting of the present ecological menace and the harmonisation of the relations between man and nature spring from the grandiose transformation of nature and society. On the one hand, the need for preserving the planet's higher forms of life, including the *Homo sapiens*, which are threatened by the present ecological situation and, on the other, the need for the revolutionary restructuring of the world in keeping with the laws of historical development mirror different aspects of the harmonisation of the interaction between society and nature as a vital process. This need operates not as a blind force—it is being increasingly understood by man and is realised in his practical activities, anticipating the epoch of a harmonious and cognised attitude by man to himself and his world.

NOTES

[1] L. I. Brezhnev, *Report of the CPSU Central Committee and the Immediate Tasks of the Party in Home and Foreign Policy. 25th Congress of the CPSU*, Moscow, 1976, pp. 92-93.
[2] See Marx and Engels, *The German Ideology*, Moscow, 1968, p. 58.
[3] See *Lenin and Modern Natural Science*, Moscow, 1969, p. 320 (in Russian).
[4] See *An Introduction to Geohygiene*, Moscow-Leningrad, 1966, p. 16 (in Russian).
[5] V. I. Vernadsky, *The Chemical Structure of the Biosphere of the Earth and Its Surroundings*, Moscow, 1965, p. 324 (in Russian).
[6] Pierre Teilhard de Chardin, *Le phénomène humain*, Paris, 1955, p. 201.
[7] V. I. Vernadsky, op. cit., p. 34.
[8] Ibid., p. 328.
[9] Ibid., pp. 328-329.
[10] V. I. Vernadsky, *Biogeochemical Essays*, Moscow-Leningrad, 1940, p. 47 (in Russian).
[11] V. I. Vernadsky, *The Chemical Structure of the Biosphere of the Earth and Its Surroundings*, p. 327.
[12] Ibid., p. 328.
[13] K. Marx and F. Engels, *Early Works*, pp. 588, 598 (Russian translation).
[14] Archives of the USSR Academy of Sciences, File 518, Folio 1, Unit 149, p. 24.
[15] Karl Marx, Frederick Engels, *Selected Correspondence*, Moscow, 1955, p. 244.
[16] I. I. Mochalov, *V. I. Vernadsky, the Man and the Thinker*, Moscow, 1970, pp. 159-160, 166 (in Russian). What makes these words even more interesting is that Vernadsky made a close study of Marxism only after he had evolved his theory of the noosphere.
[17] Frederick Engels, *Dialectics of Nature*, Moscow, 1964, p. 183.
[18] K. Marx, F. Engels, *Early Works*, p. 590.
[19] See P. Duvigneaud and M. Tanghe, *Ecosystèmes et biosphère*, Brussels, 1967.
[20] Karl Marx, *Capital*, Vol. 1, Moscow, p. 475.

SCIENTIFIC LIFE

TWO DECADES OF THE SIBERIAN DIVISION OF THE USSR ACADEMY OF SCIENCES

The great Russian scientist Lomonosov predicted in his day that Siberia would increase Russia's might. Today we see this coming true.

The Communist Party and the Soviet Government have always attached great importance to the development of the eastern areas of the USSR.

Under Soviet government Siberia has become a powerful industrial complex with a well-organised industry and agriculture, a high level of education and culture. Siberia spells Tyumen oil, Yakut diamonds, the Bratsk hydropower project, the Kuzbas, the Norilsk production complex.

During the Tenth Five-Year Plan period when industrial output in the USSR as a whole is to increase by 35-39 per cent, that of Siberia will grow by some 50 per cent, which will ensure the bulk or considerable share of the increase in the production of oil, natural gas, aluminium, of the chemical, timber, pulp and paper, and other industries. Major national economic programmes will be realised intensively to create the USSR's main oil and gas producing province in Western Siberia, to develop the Angara-Yenisei region and the Baikal-Amur railway zone, etc.

The high rates of the further development of Siberia's productive forces and of the utilisation of its wealth demand scientific decision-making in the economy. This, in turn, demands the rapid development of science there.

It was 20 years ago that the Party and the Government decided to set up the Siberian Division of the USSR Academy of Sciences with the aim of accelerating the industrial exploitation of the natural resources and strengthening the scientific potential of that region. Its 48 institutes and establishments employ nearly 35,000 people, including more than 3,000 candidates and about 400 doctors of science. The Siberian Division now has a powerful research base with scientific centres in Novosibirsk, Irkutsk, Yakutsk, Krasnoyarsk, Ulan-Ude and Tomsk. Academic branches are being organised in Tyumen, Kemerovo, Barnaul, Omsk and Chita.

At the 25th Congress of the CPSU Leonid Brezhnev said that integrated development programmes should be elaborated and implemented in the national economy. Those principles can be applied to science as well. And the Siberian Division is trying to do so, especially as the base for that has been created. I have in mind the groups of scientists working in major directions of the natural sciences,

the possibility of conducting joint research involving the efforts of specialists in different fields of knowledge. This makes it possible to tackle problems which cannot be solved by any one institute, and creates the conditions for interdisciplinary discoveries. The cooperation and concentration of efforts are reflected in the coordination plans which are financed and controlled by the Presidium of the Division. The latter, when necessary, submits proposals to the Presidium of the USSR Academy of Sciences concerning cooperation with the Academies of the Union republics, and with industries or universities.

As a rule, the coordination plans include surveying, applied research, laboratory research and development and the introduction of the results into practice. The Division now has 15 such plans, and each is fulfilled by the joint efforts of many institutes and is aimed at solving fundamental problems such as, for instance, in the field of turbulence, microelectronics, physics of lasers and laser technique, molecular biology, application of mathematical methods in chemistry, creation of elements of optical computers, automation of research, etc. Leading scientists are appointed coordinators for each problem.

Large regional programmes are an important form of organising integrated research. They correspond to the Division's major task of promoting the development of Siberia's natural resources and productive forces. Scientists participate in solving the various problems connected with the creation of territorial-production complexes and with the development of the Far North, modern methods of systems analysis and economic and mathematical modelling are widely used.

The research carried out by economists served as the basis for working out long-term forecasting, programmes and proposals concerning the development of Siberia's productive forces, including the integrated programmes for exploring the oil resources of Western Siberia, creating the Kansk-Achinsk fuel and energy complex, the basic principles of developing and distributing the productive forces in the major autonomous republics of Yakutia and Buryatia, proposals on the long-term plans of developing the Krasnoyarsk Territory, the Sayano-Shushenskoye industrial area and the Tuva ASSR, and on the use of Tyumen gas in the national economy. The Baikal-Amur railway zone is being rapidly developed.

The setting up, under the auspices of the Siberian Division, of institutions working in the humanities has markedly promoted the unification and coordination of the efforts of Siberian social scientists. They have put out a five-volume *History of Siberia* which is the first systematic and Marxist exposition of the history of Siberia from antiquity to our days. This work by Siberian historians and sociologists give a real and scientifically-grounded picture of the historical events that occurred on the territory between the Urals and the Pacific where man and his culture were developing in a unique way.

Addressing a Plenary Meeting of the CC CPSU on October 25, 1976, Leonid Brezhnev said: "Our Party congresses have particularly sharply put the task of strengthening the ties between science and production. Both scientists and production workers have set to work to accomplish that task. Much is being done by the USSR Academy of Sciences and by the republican academies."

The Siberian Division of the USSR Academy of Sciences gives much attention to the processes of applying the results of research in industry. I mean the results of major fundamental and applied research in academic science. The Siberian Division has made more than 900 suggestions most of which have been realised or are being introduced. We try to organise matters in such a way that important scientific results could be used not only by individual enterprises but by whole industries. In our opinion, this is the best way of ensuring higher efficiency of social production on the basis of scientific and technological achievements.

Geologists and geophysicists of the Siberian Division have made a number of important hypotheses as to the earth-crust structure and the origins of mineral resources, which helped to make recommendations for developing geological prospecting in the most promising parts of Siberia and the Soviet Far East such as the Siberian platform and the West-Siberian plain. The work is carried on in direct contact with industrial ministries, and deposits of oil, gas, ferrous, non-ferrous and precious metals have already been found.

The Siberian explosion-welding method is used in industry to create most valuable bimetals, which makes it possible, in particular, to save expensive stainless steel and replace it by ordinary steel welded by explosion with a sheet of stainless steel.

The research of Siberian chemists in the theory of foreseeing catalytic reactions has led to the discovery of over 50 catalysts while methods of mathematical modelling made it possible to shorten the time of building powerful reactors by more than half and to increase their efficiency. Particularly effective results were achieved in the improvement of the production of sulphuric acid used in huge amounts by the chemical industry primarily for the production of fertilisers.

Siberian experts in genetics have created new varieties of spring wheat, double crop rye, and corn adapted to the conditions of Siberia. An integrated biological programme has been worked out at the Division to accelerate corn selection. It is being implemented by institutes of the Division as well as by establishments of the All-Union Lenin Academy of Agricultural Sciences, experimental stations and state farms. The joint efforts of Siberian experts in genetics and selection, of scientists and practical workers, ensure accelerated mass zonal experiments and the purposeful selection of the most valuable varieties of hybrids.

Siberian mining specialists have designed an iron-ore pit on the basis of the latest ideas in high-speed drilling, special methods of drilling with the use of explosions, vibrators and automation. Workers of the Novokuznetsk Metallurgical Plant helped to build such a pit at the Tashtagol mines in Alpine Shoria. The new technology has reduced the cost price of ore by almost 50 per cent. It was used at other mines of the Ministry of Ferrous Metallurgy and, what is most important, became a part of new projects.

The said integrated programmes and coordination plans involve not only the institutes and design bureaux of the Siberian Division of the USSR Academy of Sciences but also the powerful industry of Novosibirsk, Krasnoyarsk, Irkutsk, Tomsk and other Siberian cities. The programmes which assumed the form of long-term cooperation agreements with Union ministries and are aimed at accomplishing the tasks of

the Tenth Five-Year Plan, are a new step in developing the ties between science and production. They have led to the setting up of a system of research institutes and design bureaux in various branches of industry, which work in cooperation with the Siberian Division, thus forming a sort of scientific and technological complex near Novosibirsk. That experience will be followed by other scientific centres in Siberia.

Close ties with production, studies of the needs of the national economy are a source of our creativity. Orders placed by industries often give birth to new trends in science. There are some difficulties in the practical realisation of scientific achievements. Industries sometimes try to avoid risks especially if the old customary technology guarantees the fulfilment of the State plans. The system of introducing innovations should therefore be improved radically.

Our work was positively assessed in the CPSU Central Committee Decision of February 1977 "On the Activities of the Siberian Division of the USSR Academy of Sciences to Develop Fundamental and Applied Researches, Raise their Effectiveness, and Introduce Scientific Achievements in the National Economy and Train Personnel". The Decision noted that in the field of the social sciences Siberia's scientists are working in close contact with the natural sciences and the practice of communist construction. At the same time it drew attention to our shortcomings and to the problems still awaiting their solution, orienting us, in particular, to the need to participate more broadly in the programmed development of Siberia's natural resources, in the integrated investigations aimed at the intensive development of the country's economy.

The scientists of the Siberian Division of the USSR Academy of Sciences are well aware of their duty to promote the acceleration of scientific and technological progress. And we see as our main task to concentrate efforts and resources in the key directions of fundamental science, to use all potentialities to further increase the effectiveness of research and the application of its results in the national economy.

Academician
G. Marchuk,
Chairman, Siberian Division
of the USSR Academy of Sciences

ECONOMIC MANAGEMENT INSTITUTE

The Economic Management Institute (EMI) under the State Committee for Science and Technology of the USSR Council of Ministers is a unique academic institution for the retraining of senior administrative personnel of the Soviet Union, among them ministers, heads of state committees and departments, their deputies, and directors of major amalgamations and enterprises.

EMI was set up in 1970 in view of the marked complexification of the economy, the growing scale of the tasks facing economic executives, the new demands made upon executives arising from the scientific and technological revolution, the introduction of new management methods, the powerful development of electronic computers, and so on.

By then, much experience had been accumulated in the country in retraining administrative personnel and helping them to raise their professional and business standards. However, the task of systematic retraining of the senior administrative personnel was tackled for the first time, and the new Institute at once inevitably faced the following questions: Who is to be trained? Trained in what? and How?

The first question had a relatively easy answer: the student contingent had been decided upon from the outset. But even so, there remained the task of forming homogeneous streams, groups, and so on, because ministers and directors of enterprises, however large, have very different things to do.

The most important task that faced EMI all the time is what to teach, its complexity depending on the fact that all the students are already engaged in a definite type of activity, have the necessary training and considerable practical experience. Consequently, what they needed was not tuition but retraining, so as to give a new content and throw a new light on the knowledge and skills they had already acquired.

The most important task of instruction set by a group of lecturers at EMI was to develop an urge for a fresh and creative approach, allowing one to take non-standard decisions and a desire to comprehend one's activity in the light of modern science.

To tackle this task there was need to structure the whole study cycle in a specific way. All the curricula are now concentrated round four chairs, whose names give an idea of the content of the curricula.

The socio-economic sciences chair, led by the well-known Soviet student of management problems, Corresponding Member of the USSR Academy of Sciences D. Gvishiani, offers the following courses: "Introduction into the Science of Management", "The Mechanism of the Use of the Laws of Social Development in Practical Management", "General Problems in the Optimal Functioning of the National Economy", and so on. This chair, as the names of the courses indicate, is largely a general theoretical one laying the foundations for work on the other sections of the curricula.

The chair of economico-mathematical methods of management, planning and prognostication (headed by Academician N. Fedorenko) helps students to comprehend concepts like economico-mathematical models of the macroeconomy, sectoral economico-mathematical models, models of optimal planning on the level of the national economy as a whole, the sector and enterprise, the creation of a sectoral system of optimal organisation of management and planning, and so on.

The automated management systems chair (headed by Academician V. Glushkov) apprises students with the methodology used in designing automated management systems, the use of modern computers to improve management structures, optimal decision-making, the problems arising from the establishment of automated management systems at various levels (enterprise, amalgamation, sector) and the technology and organisation of the work of the management apparatus.

A prominent feature of the activity of senior administrative personnel is the solution of social problems and direct involvement in organising the joint work of individuals and labour collectives. The whole complex of scientific subjects bearing on the "human factor" in management is

elaborated in the chair of the sociological and psychological aspects of management (led by Corresponding Member of the Academy of Pedagogical Sciences B. Lomov).

The importance of the chairs and their courses springs from the key proposition of the socialist theory of management: under any foreseeable level of management techniques, man continues to play the crucial role of leader and performer. The importance of sociological and socio-psychological knowledge for executives is also determined by the fact that industrial executives have solid scientific and technical grounding and much experience in working with human beings, but are as a rule much less informed about the present state of sociology, social psychology, and so on. On the other hand, the specific feature of the retraining and the size of the courses (not more than 12 hours) prevents them from becoming a concise, packaged exposition of the "academic" course.

It was necessary to adjust the content of each course to practical management and to set forth the complicated problems in a language that would be understandable to men from other special fields.

At present, the study cycle of every department starts with the problem of social forecasting, prognostication and planning. Students are given an idea not only of the forecasting of the future, but also of how to exert a purposeful influence on it, an idea of the planning of social processes in the economy, in the sector, region and individual enterprise.

The following subcycle considers the problem of personnel taken in a broad context, ranging from labour resources and the tendencies of their development as a whole and problems of occupational orientation, professional selection and retraining of personnel to the specific features of the moulding, selection and appointment of senior executives in every sector.

The courses devote much attention to the place of the executive within the system of socio-psychological ties, dealing with the traditional questions of "industrial" sociology and psychology: the individual within the industrial enterprise system, the socio-psychological aspects of management, the socialist labour collectives, and ways of creating a favourable socio-psychological climate. An analysis is made of the contemporary complex of demands made upon the individual, which ensure the most effective style of management.

Modern production, operating under the growing influence of the scientific and technological revolution, makes special demands on man's psycho-physiological qualities, which spring from the complexification of the objects of management, the changing working conditions, the greater intensity of labour processes, and so on. These questions are dealt with in the psychology of labour and management activity course.

As I have already said, one of the most important questions facing the EMI was how to teach. The answers to this question bear both on the contingent of lecturers and the organisation of the tuition process and teaching methods. Among the lecturers at EMI are leading Soviet scientists: economists, sociologists, psychologists, computer specialists, and prominent economic executives. The broad range of the subjects being studied in a relatively short period (three months off the job) has led to the need to find an optimal combination of the subjects, depending on the concrete make-up of the student group.

Traditional methods like lectures, seminars and training, and active methods like discussions, business games, and simulation of concrete situations with the aid of computers are both used in the teaching process. The elaboration of active methods takes up a large part of the scientific work done by lecturers and other staff of the scientific methods department of EMI.

There are no tests or written examinations. The main form of assessing the effectiveness of the instructions is the writing and public defence of the graduation work done by each student individually under the guidance of the department lecturers. These papers are usually connected with actual problems arising in the student's practical activity, and are based on modern economico-mathematical methods, with a solid sociological and socio-psychological back-up. All graduation papers contain practical recommendations for improving the system and methods of management, with most of the proposals being translated into practice.

Many students maintain ties with the EMI after graduation, applying for consultations on concrete problems, sharing experience and describing the application of the knowledge they had obtained. This kind of "feedback" helps to find the exact lines on which the courses, their content and methods and forms of teaching are being constantly improved.

After the first few streams of students it became clear that the available literature on the various aspects of the management does not fully meet the requirements of the study process at the EMI. Accordingly, much work was done for the preparation and publication of special manuals for students. In the six years, more than 60 study aids have been published, and there has been a mass printing of a series of nine books under the general title "Science and Management", in which the basic problems of the science and practice of management are concentrated.

The constant urge to gain new experience and sum up advanced experience in management available in the country, and consideration of the latest achievements in science are features which are important for any scientific collective, and especially so for the Economic Management Institute, for they are determined by its place within the system of management and the key tasks it has to tackle in helping to enhance the efficiency of social production.

V. Shorin,
D. Sc. (Tech.),
Rector of the Economic
Management Institute

SCIENTIFIC CONTACTS IN REGIONAL STUDIES

The Council for International Scientific Contacts in Regional Studies was founded in 1970 by decision of the Presidium of the USSR Academy of Sciences. Its members are Soviet economists, geographers, sociologists and other scientists working on theoretical and practical problems of regional studies at institutes of the USSR Academy of Sciences, the academies of sciences in the Union republics, the State Planning Committee of the USSR, the state planning committees of the Union repub-

lics, ministries and government departments.

The Council pursues the following main aims:

— study and scientific generalisation of the know-how of socialist and capitalist countries in regional studies and the territorial distribution of industries and individual large factories; problems of urbanisation; economic development of new territories; use of scientific and technological achievements in short- and long-term economic development;

— study of foreign theoretical and methodological research in regional policy, particularly regional economico-mathematical models of the distribution of the productive forces with the use of computers; critical examination of this research with the view of applying it in Soviet regional studies and the practical solution of regional problems in the Soviet Union.

In pursuance of these aims the Council has established contacts with foreign national scientific schools of regional studies, individual scientists and UN specialised agencies studying regional problems.

Since its foundation the Council has maintained regular contacts with the relevant associations in different countries, taken part in the congresses, conferences and symposiums sponsored by them and helped to promote exchanges of books and bibliographical information between the interested Soviet organisations and foreign scientists and institutions studying regional problems.

The Council gives much of its attention to cooperation with scientific institutions and scientists in socialist countries, chiefly in the elaboration of methods of studying comprehensive problems and in exchanges of know-how in this field for practical use in economic planning.

At the close of 1971, in line with its basic aims the Council sponsored a conference of scientists of socialist countries studying the distribution of the productive forces and regional economy. The Conference was attended by representatives of scientific institutions in Bulgaria, Czechoslovakia, the GDR, Hungary, Mongolia, Poland, Rumania, Yugoslavia.

The Conference's main task was to further the expansion of contacts between Soviet scientists and scientists of other socialist countries with the purpose of jointly evolving the methodological approach to forecasting research in the integrated regional problems of the long-term distribution of productive forces and of generalising the avaliable know-how in this field.

The Soviet school of integrated regional studies has extensive experience in the rational distribution of the productive forces and in regional development. Its fundamental characteristic is the practical orientation of scientific studies for the aims of planning and organising the economy on a national and large regional scale. This approach has resulted in a General Pattern for the Distribution of the Productive Forces of the USSR for 1971-1980 and the drawing up of comprehensive plans for the long-term development of large regions in the Eastern part of the USSR.

The importance of contacts between scientists with the purpose of exchanging know-how, working out methods of regional studies and using these methods for solving problems of territorial economic planning was greatly enhanced by the Council for Mutual Economic Assistance when at its 25th session it adopted the Comprehensive Programme for the Further Deepening and Improvement of Cooperation and the Development of Socialist Economic Integration of the CMEA Member States.

This consideration underlay the work of the Council throughout the subsequent years. From 1971 to 1976 there were six annual conferences of experts of socialist countries, including Cuba, Poland, Czechoslovakia, the GDR, Yugoslavia and Hungary.

These conferences considered many theoretical and methodological questions of the regional economy—regional prognostication, typology of regions, methodological problems of the efficacy of the regional economy, regional efficacy of foreign economic relations, the national income on a regional scale, urban agglomerations as an element of the regional structure of the socialist economy, and the methodology of drawing up plans and programmes for the long-term development and distribution of the productive forces.

In the work of the Council and the international conferences of experts on regional studies from socialist countries special importance has been attached to the territorial aspect of the socialist economic integration of the CMEA member states. As a rule, this has been the subject of a number of papers at every international conference. Its discussion by scientists of socialist countries helps to speed up and coordinate the economic development of the CMEA member states. The unanimity of views on the basic methodological principles of the study of the regional problems of socialist economic integration and long-term territorial planning achieved in the work of the Council and international conferences fosters the deepening of integration and its regional development.

The Council's studies in this area resulted in the compilation of the first volume of joint international work entitled *Methodology of Regional Economic Studies in Socialist Countries* (edited by Academician N. Nekrasov). This work is to be published in the Russian and English languages and in the languages of the interested CMEA member states.

Jointly with scientists of socialist countries the Council is compiling a dictionary of terms and concepts of regional economy.

Contacts with scientists in capitalist and developing countries cover mainly the receipt of delegations or individual representatives of scientific institutions, discussions organised in the Council on the most urgent problems of regional studies, including the use of economico-mathematical methods, and participation in symposiums and scientific conferences abroad.

The Council exchanges scientific literature and publications on the theory and methods of regional studies with interested research institutions in different countries.

Yu. Pavlov,
D. Sc. (Econ.), Deputy Chairman,
Council for International Scientific
Contacts in Regional Studies,
USSR Academy of Sciences

COMPETITION BETWEEN TWO SYSTEMS

Competition Between Two Systems is a regular scientific publication, consisting of separate topical issues shedding light on various aspects of this comprehensive problem and related politico-economic, social, philosophical, methodological and technico-economic questions. Figur-

ing prominently in the publication is an analysis of the lines and concrete forms of socio-economic changes and economic organisational modifications in the various capitalist countries going on under the impact of the mounting conflict between the productive forces and the relations of production under the scientific and technological revolution, the growing tendency towards the internationalisation of economic life, the growth of the anti-monopoly movement and the internationalisation of the class struggle. These publications are designed to show the substance of the present-day anti-Marxist politico-economic and sociological theories backing up the strategy and tactics of imperialism, to show the forms of its adaptation, manoeuvring and exploitation of the working people, and the methods used by state-monopoly capitalism in its struggle to keep the bourgeois system alive in the new world situation. They expose the "Left" radical and Right opportunist conceptions.

Much attention is given to theoretical matters relating to the elaboration of national economic recommendations in the socialist countries, and to critical use of foreign production experience.

The publications range over a broad spectrum of questions having a direct and indirect but highly important bearing on the course of the competition between the two systems. In the analysis of these questions an effort is made to bring out the diverse factors helping to make more efficient the solution of the problem of combining the scientific and technological revolution with the advantages of socialism, to consider the share and systemic interconnections of the various factors, to analyse the law-governed tendencies springing from the growth of the productive forces and exerting an objective influence on the dynamic of the national economic proportions, and also the character of this influence on the actual face of the economy of countries with different socio-economic systems. From this angle, an analysis is presented in the light of the dialectical unity of the class struggle, the peaceful competition between the two systems and constructive international cooperation, of the quantitative and qualitative changes taking place in the economy and social relations of the various countries, including changes in the sphere of science, education, production, cultural and everyday services, protection of the environment, the use, distribution and circulation of natural resources, and the allround development of the working people themselves as the chief productive force in society.

Among the authors are leading Soviet scholars engaged in the theoretical and practical scientific elaboration of this spectrum of problems.

An idea of the more concrete character and orientation of the matter presented in this publication can be gained from the contents of one of the latest subject issues of *Competition Between Two Systems. The Economy of Socialism and the World Economy.*

The section entitled The Deepening of the General Crisis of Capitalism contains the following articles: "The Criteria of Cyclical Economic Crises", "Problems in Present-Day Inflation", "Problems in Regulating International Payments", "The Problem of Raw Materials in the World Capitalist Economy in the 1970s", "The Problem of the Economic Gap Between the Emergent Countries and the Developed Capitalist Countries", and others.

In the section Social Development and Improvement of Socialist Economic Activity, there are these articles: "New Phenomena in the Social Development of the Soviet Countryside", "The System of Economic Stimulation in the USSR and Improvement of Material and Moral Incentives for Working People", "Calendar Planning of Individual Production Under Automated Production-Management Systems", and "The Scientific and Technological Revolution and the Working Class Under Socialism".

The section The Class Struggle and the Legal Forms of Regulating Relations Between Labour and Capital contains these articles: "Legal Regulation of Labour Relations in State-Monopoly Capitalist Countries", "The Working People's Movement for Participation in the Management of Production in the West European Countries", and so on.

In the section Technico-Economic and Social Problems there are these articles: "Marketing and Corporate Management in the USA", "MIS and US Administration", and so on.

In the section International Comparisons, there are these articles: "Basic Methodological Comparisons of the Volume of Free Services Consumed by the Population in Countries with Different Social Systems (USSR and USA)", "The Influence of the Services on the Structure of Labour".

The section Socio-Economic Aspects of Demographic Changes contains these articles: "Reproduction of the Population and the Economy", "The Social Aspects of Gerontology Under the Scientific and Technological Revolution".

Each issue contains a name index, an index of organisations, departments, institutions and companies, a subject index, and summaries of the articles in English and German.

The publication was started in 1963 and is the organ of three Scientific Councils of the USSR Academy of Sciences for Integrated Problems: "Economic Competition Between Two Systems", "The Working Class and Mass Democratic Movements in the Capitalist Countries Under the Current Scientific and Technological Revolution", "Socio-Economic and Ideological Problems of the Scientific and Technological Revolution".

The publication is put out under an Editorial Board headed by Academician A. Rumyantsev.

Competition Between Two Systems is an important scientific and reference publication not only for academic economists in various fields, but also for organisers of production, lecturers in the social sciences, and so on.

I. Farizov,
D. Sc. (Hist.)

USSR STATE PRIZE WINNERS

Among Soviet men of science awarded the USSR State Prize for 1976 are a group of scholars in the humanities.

In the field of history the Prize has been awarded to the work *History of Towns and Villages of the Ukrainian SSR,* in 26 volumes, published in 1967-1974. Its authors, who in this fundamental work define a new trend in Soviet historiography, are: P. Tronko (head), D. Sc. (Hist.), Deputy Chairman of the Council of Ministers of the Ukrainian SSR;

I. Slabeyev, Cand. Sc. (Hist.), Department Head at the Institute of History of the Ukrainian Academy of Sciences, and A. Kasimenko and I. Kompaneyets, both D. Sc. (Hist.).

In the field of literature, art and architecture the State Prize has been awarded (posthumously) to V. Lazarev, Corresponding Member of the USSR Academy of Sciences, member of many foreign academies and Honorary President of the International Association of Byzantinists for his books *Byzantine Art, Old Russian Mosaics and Frescoes, Old Italian Masters*, and *Old European Masters* which represent a major contribution to Soviet and world art criticism. In these scholarly writings their author takes account of the latest discoveries made in the respective fields.

REPLENISHMENT OF THE USSR ACADEMY OF SCIENCES

At a general meeting in Moscow on December 23-24, 1976, the USSR Academy of Sciences members and corresponding members were elected. The meeting elected one Academician and thirteen corresponding members.

Academician:
Department of History

Yu. Bromley (speciality—world history), Director of the Institute of Ethnography of the USSR Academy of Sciences, Deputy Chief Scientific Secretary of the Presidium of the USSR Academy of Sciences and member of the Editorial Council of this journal. He is an honorary member of the Hungarian Ethnographical Society and the Royal Anthropological Institute of Great Britain and Ireland. Specialising in theoretical problems of the ethnography and history of culture of the peoples of the world, the primitive communal system and the agrarian history of the European Middle Ages, he has written 170 works, including the monographs *The Peasant Uprising of 1573 in Croatia, Formation of Feudalism in Croatia* and *Soviet Ethnography: Basic Orientations*.

Our journal has published the following papers by Yu. Bromley: "Ethnographic Investigation of the Peoples of the USSR" (No. 2, 1973), "Ethnographic Studies" (No. 2, 1975) and "Soviet Ethnography Today" (No. 1, 1976).

Corresponding Members:
Department of History

G. Kim (speciality—Oriental studies), Department Head of the Institute of Oriental Studies of the USSR Academy of Sciences, Editor-in-Chief of the journal *Asia and Africa Today*, specialist in the latest history and problems of the national liberation and working-class movements in Asian countries. He has written more than 150 works, including *The Working Class of Korea: Leading Force of the People's Democratic Revolution, Proletarian Internationalism and Revolutions in Eastern Countries* (co-author) and *Lenin and the National Liberation Movement in Eastern Countries*.

Our journal has published the following papers by him: "28th International Congress of Orientalists" (No. 4, 1971) and "Development Trends in the East Today" (No. 3, 1975).

V. Pashuto (speciality—history of the USSR), Division Head of the Institute of History of the USSR Academy of Sciences. Specialist in the history of feudalism in Russia, pre-revolutionary Russian foreign policy, source studies and historiography. He has elaborated a series of theoretical and concrete historical problems of the formation of early feudal societies and states. He has written 180 works, including *Foreign Policy of Ancient Rus, Alexander Nevsky and the Russian People's Struggle for Independence* and *The Formation of the Lithuanian State*.

V. Rutenburg (speciality—world history), senior scientific associate of the Leningrad Division of the Institute of History of the USSR Academy of Sciences; corresponding and honorary member of a number of Italian academic societies. A specialist in the history of Italy and West European feudalism, V. Rutenburg shows in his studies the specific features of modern Italian capitalism and of the period of transition from feudalism to capitalism, and touches on problems of the Renaissance and the Reformation. He has written more than 160 works, including *Outline History of Early Capitalism in Italy, Italy and Europe on the Eve of New Times* and *Giants of the Renaissance*. Many of his works have been published abroad.

S. Trapeznikov (speciality—history of the USSR), a specialist in the history of the USSR, notably in the history of the CPSU's agrarian policy. He is a member of the Editorial Board of the journal *Voprosy istorii KPSS*. In his works he traces the development of agrarian relations in an historical and social context, the Communist Party's implementation of Lenin's agrarian programmes in three revolutions in Russia, the socialist reshaping of agriculture and the policy of the CPSU in this sphere.

He has written more than 100 works, including *The Agrarian Question and Leninist Agrarian Programmes in Three Russian Revolutions* and *The Social Sciences: A Powerful Ideological Potential of Communism*. Many of his works have been translated into foreign languages. His *At Steep Turns in History* has been brought out in the English, Spanish, French and Finnish languages, and it has been published in the GDR and Czechoslovakia in the German and Slovak languages; his two-volume *Leninism and the Agrarian-Peasant Question* is being prepared for publication in Arabic. Our journal has published his articles "The Struggle Against Revisionism" (No. 1, 1972) and "Lenin's Agrarian Policy" (No. 3, 1975).

Z. Udaltsova (speciality—world history), Division Head of the Institute of World History of the USSR Academy of Sciences, Vice-President of the International Association of Byzantine Studies. She is a specialist in the history of the Middle Ages, Byzantine studies, Slav studies and the history of Late Antiquity and has written nearly 200 works, including *Soviet Byzantine Studies Over 50 Years* and 13 chapters of the collective work *A History of Byzantium*. Our journal has published her paper "Soviet Byzantine Studies" (No. 2, 1975).

Department of Philosophy and Law

B. Lomov (speciality—psychology), Director of the Institute of Psychology of the USSR Academy of Sciences and Vice-President of the International Union of Psychological Sciences. A specialist in general and engineering psychology and also in the psychology of management, he has studied the main trends of the development of

present-day psychological science, and its structure and relationship with the social and technical sciences. He has written nearly 200 works, including six monographs. Our journal has published the following papers by him: "Psychological Aspects of Economic Management" (No. 1, 1973) and "Human Communication in International Space Flights" (No. 1, 1977).

I. Frolov (speciality—philosophy), Executive Secretary of the journal *World Marxist Review* and Member of the Editorial Council of this journal. He specialises in the elaboration of topical problems of modern Marxist-Leninist philosophy and has written numerous works, including *Causality and Expediency in Living Nature, Genetics and Dialectics* and *The Process of Science and the Future of Man*. Many of his works have been translated into foreign languages. Our journal has published: "Contemporary Science and Humanism" (No. 2, 1973) and "Science and the Prospects for Man" (No. 3, 1976).

E. Chekharin (speciality—law), Rector of the Higher Party School at the CPSU Central Committee, Editor-in-Chief of the journal *Ucheniye zapiski VPSh*, member of the Editorial Board of the journal *Politicheskoye samoobrazovaniye* and other publications. A specialist in the theory of the state and law, the development of the Soviet political system and the improvement of socialist democracy, he is the author of the book *The Soviet Political System in Developed Socialist Society* and co-author of three textbooks and study aids for students of law institutes. Our journal has published his article "Theoretical Problems of the Political System of Soviet Society" (No. 3, 1971).

Department of Economics

A. Anchishkin (speciality—economics), Department Head at the Central Institute of Economics and Mathematics of the USSR Academy of Sciences. He is a specialist in the theory of socialist reproduction, the methodology of economic planning and prognostication, and macro-economic modelling. His many works include *Rates and Dimensions of Economic Prognostication, Forecasting the Growth of the Socialist Economy* and *Methods of Forecasting the Dynamics of the Economy*.

E. Kapustin (speciality—economics), Director of the Institute of Economics of the USSR Academy of Sciences and Member of the Editorial Council of this journal. He is a specialist in the political economy of socialism, and the author of more than 200 works, including *The Economic Aspect of the Socialist Way of Life* and *The Quality of Work and Wages* (this book was awarded the Lomonosov Prize). In our journal we published: "The Scientific and Technological Revolution and the Improvement of Socialist Production Relations" (No. 1, 1975), "The Socialist Way of Life as a Socio-Economic Category" (No. 1, 1976) and "Socialist Emulation: Creative Quests" (No. 4, 1976).

A. Notkin (speciality—economics), Division Head at the Institute of Economics of the USSR Academy of Sciences, a specialist in the Soviet economy. He has written more than 100 works, the best known of which are: *Essays on the Theory of Socialist Reproduction, Socialism's Material-Production Potential* and *The Determination of the Economic Efficacy of Investments*. Many of his works have been translated into foreign languages.

M. Sergeyev (speciality—economics), First Deputy Chairman of the Presidium of the Urals Scientific Centre of the USSR Academy of Sciences and Director of the Institute of Economics at the Urals Scientific Centre. A specialist in production management, economic autonomy and the stimulation of production and scientific labour organisation, he has written more than 80 works, including 16 monographs on the above-mentioned subjects.

Department of Literature and Language

V. Shcherbina (speciality—history of literature), Deputy Director of the Gorky Institute of World Literature of the USSR Academy of Sciences, a specialist in 20th-century literature, Soviet literature and the theory of literature, and the author of many works, including *Topical Problems of Modern Literary Criticism, Lenin and Questions of Literature, The Ways of Art* and *The Voice of the Epoch*. Our journal has published his paper "Ideology and Some Aspects of Culture" (No. 3, 1972).

Congresses • Conferences • Symposiums

25th CPSU CONGRESS: THEORETICAL DEVELOPMENT

In October 1976 Moscow was the venue of an all-Union conference on the theme "25th Congress of the CPSU and the Development of Marxist-Leninst Theory". Convened by the Institute of Marxism-Leninism, the Academy of Social Sciences and the Higher Party School of the CC CPSU, and by the USSR Academy of Sciences, it was attended by social scientists, university lecturers, Party workers and propagandists.

The plenary session was opened by M. Zimyanin, a Secretary of the CC CPSU, who noted that the 25th Congress had gone down in the history of mankind as one of the most outstanding political events of our time. The Report of the CC CPSU to the Congress, he said, was a programme document of the Party, and the propositions contained in it represent the consistent application and creative development of Marxism-Leninism. It was noted at the Congress that the past few years had been particularly fruitful ones for Soviet social scientists. A number of fundamental studies appeared on questions related to Party history and theory, general history and the history of our country, dialectical and historical materialism, political economy, the international communist, working-class and national liberation movements, the general crisis of capitalism and the theory of international relations. As L. I. Brezhnev, General Secretary of the CC CPSU, underlined at the Party Congress, at the present stage of the USSR's development the need for further creative elaboration of theory, far from diminishing, has been growing; fresh opportunities for fruitful research—both of a general theoretical, basic and applied character—arise at the conjunction of various sciences, notably the natural and the social.

The Party, Zimyanin continued, pays paramount attention to the further development of Marxist-Leninist theory and the entire complex of the social sciences, to their active and direct participation in the elaboration and solution of problems of communist construction, in the foreign policy activities of the CPSU and the Soviet state.

The 25th Congress pointed out, M. Zimyanin further noted, that the tasks facing our social sciences could be accomplished only if there was close connection with practice.

The organisation of integrated research is becoming a condition essential to the further success of work in both the natural and the social sciences. The need for an integrated, systems approach to the solution of major socio-economic and socio-political problems was emphasised in the documents of the 25th Congress; this need arises from the very dialectics of our social development, its present level of maturity and dimensions. With the present differentiation of scientific knowledge, including the social sciences, any narrow specialised research risks becoming useless and untenable unless it is connected with an integrated, comprehensive study of the problem.

Soviet social scientists, the reporter said in conclusion, are true assistants of the Leninist party in its ideological, theoretical, political and organisational activities, in guiding the building of the new society; in analysing and generalising the major social process of our time; in the historical struggle, together with all revolutionary, democratic and progressive forces, against imperialism, reaction and war. The Party has always relied on the active assistance of Soviet social scientists when charting its home and foreign policy, and when putting this policy into effect.

The conference then heard a report by Academician P. Fedoseyev, Vice-President of the USSR Academy of Sciences, "Theoretical Problems of Developed Socialism and Communist Construction" (published in this issue of the journal), and reports by Academician A. Yegorov, Director of the Institute of Marxism-Leninism of the CC CPSU, "The Party in the Period of Developed Socialism", and by Academician N. Inozemtsev, Director of the Institute of the World Economy and International Relations, "Problems of Contemporary World Development and International Relations".

Fifty-six reports and communications were heard at the four section meetings: "The Party in the Period of a Developed Socialist Society", "Socio-Economic Problems of Developed Socialism", "Problems of Communist Education, Socialist Ideology and Culture in the Conditions of Developed Socialism", "Problems of the CPSU's International Policy and of the World Communist Movement".

SOCIAL AND ECONOMIC DEVELOPMENT OF THE THIRD WORLD COUNTRIES

An international conference on "Analysis of the Conceptions of the Socio-Economic Development of the Third World Countries", attended by more than 200 scholars from Bulgaria, Czechoslovakia, the GDR, Hungary, Poland, Rumania and the Soviet Union, was held in Kiev in September 1976. The Conference was sponsored by the Economy and Policies of the Developing Countries Problem Commission of Multilateral Cooperation of the Academies of Sciences of the Socialist Countries, the Current Problems of the Developing Countries Scientific Council of the USSR Academy of Sciences, the Institute of the World Economy and International Relations of the USSR Academy of Sciences, and the Institute of Economics of the Academy of Sciences of the Ukrainian SSR.

The first plenary session was addressed by the Problem Commission's Chairman, E. Primakov, Corresponding Member of the USSR Academy of Sciences.

The following collective reports were read and discussed: "Bourgeois Science on the Developing Countries: A Critique of Methodology,

Basic Aims and Trends" (USSR Academy of Sciences), "Apologetic Theories of Backwardness in Bourgeois Economic Science" (Hungarian Academy of Sciences), and "Non-Marxist Theories of the Political and Social Development of the Countries of Asia, Africa and Latin America" (Czechoslovak Academy of Sciences).

As was noted in the reports, scientists of the socialist countries have gained a considerable experience in studying the political, economic and social processes under way in the Third World. A number of interesting works have appeared containing a systems analysis of the entire complex of current problems of the countries of Asia, Africa and Latin America. These problems are examined not from narrow, regional positions, but in terms of world socio-economic development, in the context of the general crisis of capitalism and the existence of two systems. It is precisely this approach that enables Marxists to show the anti-imperialist trend of the struggle of the developing countries for economic independence and equality in economic relations; to see in the social processes under way in these countries signs of the development of the anti-imperialist struggle into a movement for the social reconstruction of society, for progressive forms of social advance, for the socialist orientation.

In the conditions of the intensified revolutionary process bourgeois science is compelled to relinquish undisguised apology of capitalism and colonial utopias, to look for new approaches to the problems of the newly-independent countries, to advance theoretical projects and recommendations the realisation of which would return these countries to dependent capitalist development.

Exposure of imperialism's "new doctrines", of the ideological subversions of the neocolonialists is furthering the cohesion of all revolutionary forces and becoming an important condition of the liberation movement's further progress.

The Conference in Kiev discussed a wide range of topical problems connected with a critical evaluation of the bourgeois conceptions of the social development of Third World countries. They generalised the vast experience of scientific criticism of the methodological flaws of bourgeois theories, of exposing their idealism and metaphysics, their apologetic substance, as well as the neocolonialist trend of the recommendations advanced by bourgeois ideologues. The various so-called theories of "backwardness", of "stages of growth", of "the vicious circle of backwardness", of "zero growth", of "the interdependence of development", and much else in this vein, were subjected to critical analysis.

The need was stressed to dialectically combine critical analysis of non-Marxist theories with a positive elaboration of the pressing problems of the newly independent countries and to strictly differentiate the various trends of social thought in these countries.

Great attention was devoted to defining and elaborating new approaches in the Marxist analysis of Third World problems. The diversity and complexity of these problems, the rapid changes in the social life of the developing countries require that Marxist thought indicate in good time the ways of solving the theoretical and practical problems posed by reality, that it advance scientifically-grounded practical recommendations.

The Kiev Conference is one of the meetings held in accordance with the long-term plans of the Problem Commission of Multilateral Cooperation, which are aimed at bringing together scientific forces and coordinating research in the given field.

In the unanimous opinion of the Conference participants, its conclusions and recommendations will stimulate joint activities by scholars of the socialist countries, will help to raise the scientific level of researches and make for closer links with practice.

K. Varentsov,
Cand. Sc. (Econ.)

CONGRESS OF POLITICAL SCIENTISTS

The 10th World Congress of the International Political Science Association (IPSA) devoted to the theme "Time, Space and Politics" was held in Edinburgh (Scotland) in August 1976. It was attended by more than 1,000 scholars. Comparable in number of participants with the previous, Montreal Congress, the Edinburgh Congress was the most representative of all in number of countries represented (56). The representation of the socialist countries was considerably broader: it was attended for the first time in IPSA's history by a delegation from the GDR (8 scholars) and by a Cuban delegate as an observer. Also the number of scholars from the developing countries of Asia, Africa and Latin America was much greater than previously. As always the developed capitalist countries of the West were widely represented.

The Soviet delegation of 27 scholars was headed by Academician P. Fedoseyev, Vice-President of the USSR Academy of Sciences. They included specialists in philosophy, history, law and economics, which made it possible to give a comprehensive picture of the social sciences, the achievements of the political system of Soviet socialist society and the Marxist-Leninist methodology in studies in the political sciences.

In preparation for the Congress the Soviet Political Sciences Association had a number of the papers of the Soviet delegation translated into foreign languages (English, French, Spanish) and published in the form of a thematic collection which was distributed among the Congress participants ("Time, Space and Politics Soviet Studies in the Political Sciences", USSR Academy of Sciences, "Social Sciences Today" Editorial Board, Moscow, 1976). Extensive preparatory work was carried out also by the associations of political sciences of other socialist countries. Thus Polish scholars presented 30 papers to the Congress, their colleagues from the GDR put out a special collection of papers, and Rumanian scholars a special issue of the journal *Viitorul Social* (Social Future).

The Congress opened with a plenary session which was addressed by the Chairman of the Organising Committee G. Moodie (Great Britain), UNESCO representative V. Mshveniyeradze (USSR), and former IPSA president J. Laponce (Canada). In his speech at the plenary session Academician P. Fedoseyev noted that an atmosphere of useful cooperation is becoming the prevailing atmosphere in international scientific exchange and that there is every possibility of joint discussion of a whole complex of problems, notwithstanding fundamental ideological differences and

differences of class approach to analysis of political phenomena between Marxist-Leninist science and the various trends of the political sciences in the West. He went on to say that the search for ways of adjusting international relations for the purpose of preventing a thermonuclear catastrophe, the promotion of fruitful mutually advantageous cooperation between all states, protection of the environment, the rational and just utilisation of natural, including energy resources, the expansion of scientific, technological and cultural ties in the interests of all peoples—all these problems should be the object of joint study by representatives of the social sciences whose conclusions and recommendations can help solve these problems in practice.

The main theme was discussed at 21 sessions and as usual at special meetings and meetings of the standing research committees. The wide range of problems discussed at the Congress, whose main theme was formulated in broad terms, may be gathered from the topics of the main sessions. They were: "History as a field of experience and experimentation"; "Simulating the past"; "Comparative history and comparative politics"; "Theories of political development and evolution"; "Planning, futurology and politics"; "Memory and consciousness in political systems"; "Ideology as a control of time and space"; "Patterns of time and space cleavages in political systems"; "Setting, protecting and expanding spatial boundaries"; "Political, economic and cultural means of controlling time"; "The spatial dimensions of administration"; "Private and social time, private and social space: the policy of privacy and secrecy"; "Time, space and law"; "The closing of space and its impact on the international system"; "Geographical and political equilibrium: the politics of energy resources"; "Spatial models of political analysis"; "Recent theoretical developments: time and space aspects"; "Predicting and affecting political change: the role of sampling and survey methods"; "Politics and geography: the diversity of accessible space and the ethics of distribution"; "The future of world politics: functionalism or new territoriality?"; "Social and cultural planning" (this session was formed on the proposal of the Soviet scholars). Soviet scholars (V. Tumanov and V. Chirkin), were the convenors and chairmen of two sessions. Yugoslav and Polish scholars (N. Pašić and J. Wiatr) headed two sessions.

The Soviet delegation, which participated in the work of all the main sessions and the research committees, as well as in nine special meetings, read 15 papers at the Congress and took the floor in the discussion more than 30 times. The delegation members of other socialist countries also actively participated in the Congress proceedings.

It is as yet difficult to sum up the Congress results. But unlike past congresses the political sciences at the Edinburgh Congress were oriented towards history as evidenced by the problems discussed in many of the sessions, among them that of simulating the political situations of the past, the need "to learn from history", to combine futurological forecasting with historical analysis, etc. However, even Western political scientists admitted that it is still too early to speak of Western political science overcoming its "traditional antihistorism". Much time was taken up by the attempt to interpret such concepts as "space", "territory", "boundary",

etc., in the context of political science, but no unanimous opinion was reached on the matter. Former congresses ignored problems of law. In this respect symptomatic is the fact that in the course of the Congress attention turned to such problems as the relationship between politics and law, law and culture, a comparative study of the activities of legislative and judicial bodies. Evidently the desire to accentuate the importance of the role of political science and to enhance its prestige explains the great attention paid to such problems as "politics and science", the concept of political ideology and its place in social consciousness, the teaching of the political sciences, etc.

The discussion of the aforementioned and of many other problems showed that Western political science continues to be characterised by a disproportion between the accumulation of empirical material and the elaboration of individual methods, on the one hand, and the absence of a stable theoretico-methodological base, of theory of a high level that would furnish the key to understanding individual problems, on the other. Hence the tendency to replace such theory with abstract scholastic schemes that divorce science from political reality.

The Congress disclosed the poor knowledge by Western political scientists of the social and political system, of the standards of political life of the socialist countries, of the achievements and mechanism of socialist democracy. A heightened interest in Marxism was evident, although Western political science by and large acts as the antipode of Marxism-Leninism. A "Left"-radical line was also apparent at the Congress, in which criticism of capitalism was combined with attempts to declare Marxism antiquated.

The participation of socialist scholars in the Congress infused its work with a keen awareness of the connection between political science and reality, showed the advantages of a political ideology that has developed on the scientific foundation of Marxism-Leninism, opened up new opportunities for a scholarly dialogue in the conditions of international detente. Recognition of the great services of Soviet political sciences was the acceptance of the invitation to hold the next congress of the IPSA in Moscow in 1979.

The Edinburgh Congress elected a new president of the IPSA K. Deutsch (USA), and a new Executive Committee of the Association. The five newly elected vice-presidents include the Soviet member of the Executive Committee, G. Shakhnazarov. J. Trent of Canada was elected General Secretary of the IPSA. The work of the Congress was widely covered by the foreign press.

I. Yevgrafov

FORUM OF THE INTERNATIONAL LAW ASSOCIATION

The 57th Conference of the International Law Association was held in Madrid from August 30 to September 4, 1976. It was attended by international law experts from 35 countries. One of the largest delegations was from the Soviet Union led by Corresponding Member of the USSR Academy of Sciences G. Tunkin, Chairman of the Soviet International Law Association.

In the course of a week, at the

sittings of 12 committees 450 delegates discussed major points of international law and passed decisions on some of them.

The Conference agenda contained 15 items. The most important of these were environmental protection; human rights; law of the sea, air and space law; international water resources law; and international terrorism. It must be noted that the Association has been studying some of these problems for many years and has given them considerable attention at a number of meetings over the past few years.

At the discussion of the legal aspects of environmental protection the Soviet delegation underscored that it was necessary to organise comparative studies of the legislation and court practice of different countries in the sphere of environment and especially their efficacy. Attention should be concentrated not so much on questions of liability for violations of the norms regulating environmental control as on the creation of the conditions ensuring priority for environmental protection when questions of production are decided. In the discussion of these problems the work of the Conference proceeded in the spirit of the Helsinki Final Act, a section of which, "The Environment" provided that all countries would develop cooperation promoting the progressive development, *codification and implementation of international law as a means of preserving and enhancing the human environment.*

In the discussion on the protection of human rights special attention was given to the question of implementing the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights. The reporter on this question was Professor J. Humphrey of Canada. The Conference expressed its satisfaction that these covenants had come into force and declared that it hoped they would soon be ratified by countries that had as yet not done so. In a special resolution satisfaction was expressed over the fact that the Final Act of the Helsinki Conference on Security and Cooperation in Europe had reaffirmed the provision according to which in the sphere of human rights and basic freedoms all countries would abide by principles conforming to the aims and principles of the UN Charter, the Universal Declaration of Human Rights and international covenants on human rights. True, at the Conference attempts were made to use the question of human rights for interference in the internal affairs of sovereign states, but these attempts were emphatically denounced by the Soviet delegation.

In the discussion of the law of the sea attention was centred this time on the law of the sea of the future and the tendencies linked with the influence of the scientific and technological revolution on the law of the sea. For instance, in the report of Professor E. du Pontawice of France prominence was given to the legal aspects of the exploitation of future anchored submarine homes—floating or on the sea-bed. Considerable attention was attracted by the memorandum and paper presented by Professor M. Lazarev of the USSR, in which he dealt with the legal position of marine cities, artificial islands, marine thermonuclear power stations, marine plantations, submarine refrigerators and so forth. He stressed that all states had to abide by the principle of the free use of the high seas. A wide discussion unfolded on problems of landlocked countries (of which altogether there

are 31). Although the committee chairman, Professor K. Zemanek of Austria, stressed that international law could not remedy the unfortunate geographical location of landlocked countries, at the discussion it was noted that such countries were interested in privileges in the economic zones of coastal states, in the sphere of transit, and so forth.

A paper on air law was read by Doctor R. Mankiewicz of Canada, who substantiated a draft for a summary convention on international air transporation. In the paper by the Soviet delegate Professor A. Talalayev and in papers presented by other participants it was noted that in the light of established practice simultaneous all-embracing codification of international air law was unrealistic, that its partial and gradual codification was preferable. In the examination of space law priority was given to a discussion of the legal aspects of direct broadcasting with the aid of satellites.

The proceedings of the Committee on International Water Resources Law (Chairman—G. Tunkin) ended with the adoption of constructive decisions. The Conference approved the resolution on the protection of water resources and marine structures proposed by the committee and decided to send the relevant materials to the International Red Cross, the International Law Commission and the United Nations Water Conference.

There was a fairly sharp discussion on the question of international terrorism. The reporter on this problem was Professor A. Evans of the USA. In their defence of the draft convention on legal control of international terrorism Evans and the representatives of the South African Republic and Israel, who supported him, advocated a clearly unacceptable concept of "international terrorism" that ignored entirely the criterion "for political motives", on the one hand, and much too vaguely defined the object of crime, on the other.

Among the other questions considered at the Conference mention must be made of the status of nations entering into economic relations and signing contracts and other transactions with private firms. This question is of considerable practical importance for developing countries. In upholding the interests of these states, Professor R. Khalfina of the USSR convincingly showed the need for clearly distinguishing between participation of juridical persons in the economic relations of nations on their own behalf and participation of the states themselves. In the latter case a state has all the attributes of sovereignty, including immunity.

A. Sastre, President of the Spanish International Law Association, was elected President of the International Law Association for the next two-year period.

In addition to official sittings there were useful exchanges of scientific information unofficially, and this helped to expand scientific contacts between international law experts of many countries.

The 57th Conference of the International Law Association was held in the spirit of the Helsinki Final Act. This determined the atmosphere in which the discussions were held and decisions were passed on pressing issues of present-day international law, and the contribution made by the Conference towards the advancement of international law and its science.

D. Feldman,
D. Sc. (Law)

Almost 200 philosophers from many countries of the world attended the 11th International Hegel Congress in Lisbon in August 1976.

It was opened by Professor W. Beyer of Austria, who has been Chairman of the International Hegelian Society for many years, and who was once again elected in Lisbon as Chairman for another two-year period. He emphasised that Hegel's philosophy offered a vast field for the clash of various progressive and conservative interpretations, and that the Congress was being attended by analysts whose study of Hegel's doctrine was a starting theoretical point for critical reflections about contemporary reality.

The discussion of the central topic of the Congress, "Idea and Matter", ran along three main lines. First, many papers and speeches dealt with the study of Hegel's philosophy of nature for the purpose of bringing out in greater depth and detail both its rational kernel and its flaws and shortcomings. In the analysis, resort was made not only to *Philosophy of Nature* but also to his other works, including his lectures on the history of philosophy, and on aesthetics as well as to his *Phenomenology of Mind*. Second, there was great interest in the functions of the material and objective aspect of social life in general, with the discussion quite naturally moving into the area of the problems in the philosophy of history. Third, some speakers discussed the role of the "objectified spirit", above all the state, in social reality, and also in general the processes of the "materialisation" of ideas, that is, the translation into the life of society of philosophical, sociological and political conceptions and slogans, when these themselves become a sort of "material force".

In some papers an attempt was made to apply the dialectical method to assessing the present political situation in the world. Thus, Portuguese philosophers tried to analyse their country's development through the prism of dialectical categories, frequently making use of their Marxist interpretation. V. Magalhães-Vilhena whose paper, "Theory, a Material Force", opened the working part of the Congress, emphasised that in democratic Portugal a start had been made on the studies of Hegel's works and their analysis by Marx for the purpose of gaining a deeper comprehension of the laws of historical progress.

The creative atmosphere at the Congress was largely determined by the active participation of philosophers from the socialist countries: Bulgaria, Czechoslovakia, the GDR, Hungary, Poland, Rumania, the USSR and Yugoslavia. Interesting papers were presented among others by M. Bychvarov, Academician S. Ganovsky, D. Pavlov, P. Rusev (Bulgaria), R. Kirchhoff, G. Kröber, H. Ley, and J. Streisand (GDR), J. Zeleny, J. Netopilík, and L. Hanzel (Czechoslovakia).

The Soviet delegation took a very active part in the proceedings. Academician M. Mitin considered the concept of the "popular spirit" in Hegel's philosophy of history. Corresponding Member of the USSR Academy of Sciences T. Oizerman showed, in a paper on the "idea of reason" in history, the profundity of Hegel's idea about the historical movement of "reason" towards freedom through negation and struggle. Kh. Momdjan attacked the oversimplified and imprecise interpretation of Hegel's views of history as being fatalistic, on the one hand, and voluntarist, on the other. S. Oduyev spoke broadly and in detail about the Marxist-Leninist conception of the analysis and evaluation of Hegel's nature philosophy. I myself analysed Hegels's category of "contradiction" and its inherent tendencies towards a reconciliation of opposites, which have been extolled by the "second generation" of the Frankfurt School, like J. Habermas. In my paper I also said that it was wrong to present Hegel as a "nihilist" with respect to mathematical natural science and formal logic.

Interesting papers were presented by Marxists from the capitalist countries, including some young philosophers. S. Toiviainen (Finland) gave a thorough analysis of the early stage in the advance of G. Lukács towards Marxism, Ph. Moran (USA) analysed Hegel's conception of the state and governmental power, while U. Jensen (Denmark) criticised the logicians of science I. Lakatos and P. Feyerabend.

In general, the Marxist approach to theoretical problems prevailed at the Congress, but now and again some Western philosophers made partial use of Marxist terminology for liberal-reformist or ultra-"Left" constructions, which had very little in common with genuine Marxism.

In some discussions at the Congress there was a clash between Marxist and opposite views, above all concerning the role of the masses and revolutions in history. Academician M. Buhr (GDR) set forth the Marxist view of these questions, describing the character of the conditions which ensure the successes of revolution and preservation of its gains. He refuted the ideas suggested at the Congress that "theory" as such was never able to take possession of masses of people and that in our day any revolution "turns out to be premature" and that the epoch of revolutions was allegedly bound altogether to recede into the past.

There was a sharp discussion of the paper presented by the Marxist R. Steigerwald from the FRG, when his opponents (also from the FRG) tried to refute his well-reasoned thesis that Marxism as a world outlook was incompatible with Freudism.

There was also a debate on the paper presented by E. Hahn (GDR), who showed that according to the Marxist doctrine it was quite possible to bring about a conjunction and even an organic fusion of ideology and scientific cognition: some of his Western opponents denied that a scientific ideology could exist at all.

There was a broad discussion on the paper given by W. Becker (FRG), who suggested the "hybrid" conception of the role of "reason" in the materialised and spiritual history of man, combining some motive of Hegel's philosophy of history with J. Mills's socialist views and partially with those of M. Weber and M. Horkheimer. According to Becker's conception, "reason" in history leads both to freedom and to the domination of "manipulations" and indifferent technicism. Many Marxists argued against this conception, which casts doubt on the very possibility of rational cognition of the regularities of social development. They also objected to a paper by W. Zimmerli (Switzerland), who made use of the fact that Hegel had no coherent terminological designation for materialism and idealism in an effort to prove that Hegel had risen over and above the antithesis of the two main lines in the history of philosophy, so that in our day there was allegedly neither a "pure

materialism", nor a "pure idealism".

Outside the framework of its main programme, the Congress heard a paper by G. Günther (FRG), entitled "Idea, Time and Matter". It dealt with the successes in the elaboration of so-called temporal multiple-value symbolic logics. In addition, a traditional youth forum was arranged within the framework of the Congress dealing, on this occasion, with the struggle between materialism and idealism as philosophical trends in contemporary conditions.

The next, 12th Congress of the International Hegelian Society is to be held in the Austrian city of Salzburg in 1978. Its subject is to be "List der Vernünft" ("Cunning of Reason"), and this holds promise of interesting and intense discussions on problems in the philosophy of history.

I. Narsky,
D. Sc. (Philos.)

MEETING OF ARCHIVISTS

The 8th International Congress on Archives, held in Washington in September-October 1976, was attended by representatives from 55 countries, including a Soviet delegation of 13 archivists, and for the first time, a delegation of Cuban archivists.

The Congress was opened by the President of the International Council on Archives (ICA), F. Dolgikh, Director General of the Main Archives Administration under the USSR Council of Ministers. He defined the main directions of the Congress' work which furthers the solution of the pressing problems of improving the organisation of archives and enhancing their role in information service for the benefit of economic, scientific and cultural progress. Messages of greetings from the President of the USA, from UNESCO and other organisations were read.

In accordance with the programme adopted by the Congress the following four themes were discussed at plenary sessions: radical changes in the pre-archival records management; the technological revolution in archives; broader access to and use of documents; archives in the developing countries.

In the discussion that followed (three reporters on each theme) attention was focused on problems of appraisal of contemporary records, the establishment of intermediate records centres, the participation of archives in the organisation of records management in government bodies, the introduction of new techniques in archives, the broad use of documents in the interests of the national economy, science and culture, and on many other important issues.

One of the main reports was made by the Soviet specialist, A. Kurantov, Director of the All-Union Research Institute of Records Management and Archives, who basing himself on the experience of Soviet archives set forth the underlying principles.

As at the previous Moscow Congress considerable interest was aroused by the reports of the heads of archives of Nigeria, the Ivory Coast and Argentina on the state of affairs in this field in the developing countries and on the technical assistance rendered them by the archival administrations of developed states. Speaking on this question the Soviet representatives (M. Kapran and B. Ramazanova) set forth the position of the Soviet Union in the matter of extending technical and other assistance to the developing states. They pointed in this connection to the existing opportunities for foreign students to study in Soviet higher educational institutions, for archivists from the developing countries to familiarise themselves with the experience of work of the state archives of the Soviet Union, for exchanging literature on management of archives, and for holding seminars of archivists of these countries, under the auspices of UNESCO and the ICA.

The closing session of the Congress summed up the results of its proceedings and adopted recommendations on the problems discussed. The Congress underscored the importance of following up the recommendations made at previous congresses, especially at the 7th International Congress in Moscow in 1972. Particularly stressed was the need to centre attention on improving the training of national cadres, expanding research in archives and the publication of works on scientific principles of archival management. Recognising the importance of conducting research in the scientific archival terminology of today the Congress recommended setting up a committee to prepare an international archival glossary.

The Congress recommended the Executive Committee of the ICA to study the possibilities of using computers for retrieval of necessary information together with the other systems used in libraries and in other records centres, and also to draft an international agreement on the legal validity of microreproductions of archive documents, with due account of the recommendations published.

On the proposal of the Soviet delegation the Congress highlighted the historical significance in the lives of the peoples of the world of the Final Act of the Helsinki Conference of heads of state and government and in this connection recommended making wide use of archive documents in the interests of social progress, peace and friendship.

It was also decided to hold an International Archives Week in 1978.

At a meeting of the ICA General Assembly (the supreme organ of this international organisation) held after the Congress, Dr. James B. Rhoads, Archivist of the United States, was elected the ICA's new President for the next four years. The 9th International Congress on Archives will be convened in London in 1980.

M. Kapran

SOVIET-JAPANESE SYMPOSIUM OF ECONOMISTS

The 10th annual Soviet-Japanese Symposium of Economists held its sittings last October in Tokyo and Kyoto, Japan. The Soviet delegation was led by Professor E. Kapustin, Director of the Institute of Economics of the USSR Academy of Sciences, and the Japanese delegation by Professor Tsutomu Ouchi of Tokyo University.

By agreement the following subjects were on the agenda: 1) specifics of the present stage of Japan's economic development, 2) economic and social problems of the USSR's present development (by special request of the Japanese side papers on agrarian problems were read by both delegations) and 3) problems of the development of multinational corpo-

rations. On each of these three groups of subjects papers were presented by Japanese and Soviet economists. Most of them were circulated before the Symposium commenced.

In the discussion of the first group of subjects the main paper, "Turn in the Development of the National Economic Structure in Japan", was read by Professor Shunzo Nitta of Toyo University, Tokyo. He noted that in Japan today a sharp turn was taking place in the development of her economic structure. Sparked by the crisis of 1974-1975 this was a turn towards slower rates of growth and changes in the basic inter-branch and reproduction balances. The crisis had given rise to new economic imbalances and upheavals in international monetary-financial and fuel-energy relations. The priority of science-consuming industries had been further consolidated in the process of economic growth.The key symptom of this turn, Professor Nitta said, was the drastic growth of exports of complete sets of factory equipment.

A paper on the same subject was delivered by E. Leontyeva on behalf of the Soviet delegation. She raised a number of questions about the character and specifics of the crisis in the Japanse economy, the role of structural elements in the growth of inflation, and the correlation between state intervention and market spontaneity in the present structural turn. Both papers were the basis of a discussion, in the course of which various viewpoints were stated on the emergent structural turn in the Japanese economy.

In the discussion of the present economic development in the USSR the main papers were read by E. Kapustin ("Results of Soviet Economic Development in the Ninth Five-Year Plan Period, the Socio-Economic Problems of the Tenth Five-Year Plan and the Tasks of Soviet Economic Science"), V. Kashin ("The Further Improvement of the System of Plan Indicators in the Soviet Economy") and V. Morozov ("The Present Stage of the Development of Agriculture in the USSR"). From the Japanese side a paper on the development of Soviet livestock breeding in the tenth five-year plan period was read by Tatsuo Kaneda, Division Head, Ministry of Agriculture and Forestry of Japan.

The Soviet papers dealt with the main results of the 25th Congress of the CPSU, traced the present trends of economic development in the USSR and characterised the task of making the maximum use of internal resources for the economy's further intensification. The discussion of these papers showed that Japanese scholars were greatly interested in the problems of utilising labour resources, the use of cost and natural indicators in Soviet economic management, the promotion of agro-industrial integration and the specialisation and concentration of agricultural production. In their closing speeches Soviet economists gave detailed replies to the many questions raised at the discussion. In addition to advancing interesting considerations on the problems of the further development of livestock breeding in the USSR, Tatsuo Kaneda reviewed some Sovietological viewpoints about socialism's agrarian problems. In their speeches Soviet delegates explained the social essence of these viewpoints and with the aid of concrete statistics and facts showed their disparity with actual processes and tendencies. These speeches were positively appraised by most of the participants in the Symposium.

The third group of subjects concerned the activities of multinational corporations and the impact of these activities on the world economy and international relations. For the Japanese side a paper was read by Professor Okumura Shigetsugu of Kyoto University ("Financing Operations of Multinational Corporations and International Concentration of Capital"), and for the Soviet side a relevant paper was presented by I. Ivanov. They analysed the financing operations of the multinational corporations, the contradictions between these corporations and sovereign states, and their role in imperialist foreign policy.

Almost all the scholars present at the sitting took part in the discussion of these papers. Despite certain distinctions in assessing the possible regulating influence of international organisations on the activities of the multinational corporations, the discussion on most of the issues raised in the papers showed that there was much in common among Soviet and Japanese economists in characterising these activities.

A point to be noted is that all the problems raised at the Symposium were comprehensively analysed during the discussions. The Symposium was a tangible contribution to the promotion of Soviet-Japanese scientific contacts.

V. Morozov,
Cand. Sc. (Econ.)

SLAV CULTURES

In October 1976, Berlin acted host to the International Conference "The Slav Cultures in the History of European Cultures (18th to the 20th Centuries)", organised by the GDR Academy of Sciences and GDR Commission for the UNESCO within the framework of the Project for the Study of Slav Cultures (adopted at the 16th Session of the UNESCO General Conference). Some 200 scholars from 24 UNESCO member countries took part. One of the largest national delegations was the Soviet group (40 scholars) which presented 25 papers.

The Conference was opened by W. Kalweit, Vice-President for Social Sciences of the GDR Academy of Sciences, and V. Tyurin, Authorised Representative of the General Director of the UNESCO. Speaking on the problems up for discussion Professor G. Ziegengeist, Director of the Central Institute for the History of Literature of the GDR Academy of Sciences, said that the Conference would contribute to a more clear understanding of the functions and significance of the Slav national cutures in all-European cultural development in the 18th-20th centuries, to showing more specifically the contribution of the Slav peoples to cultural progress in Europe and in the world.

Of considerable theoretical and methodological interest was the paper "The World Significance of the Cultures of the Slav Peoples" made at the plenary session by D. Markov, Director of the Institute of Slavonic and Balkan Studies of the USSR Academy of Sciences. He noted that a successful comprehensive study of the cultures of the Slav peoples and their international ties called for a clear definition of the concept "world culture". He subjected to a critical analysis the views of those scholars who reduce this concept to a simple sum of national

cultures and also of those who rule out national features by introducing the term "supernational culture". The concept of world culture, D. Markov stressed, is connected with the socio-historical development of mankind, with the concept of historical and cultural progress, the pivot of which is humanism, interpreted in its historical context and comprehensively revealed by means of diverse cultures as a process showing the true essence of man in his spiritual and moral life.

The work of the Conference proceeded in three sections. The first examined problems related to the historical integration of the Slav cultures within the framework of all-European cultural consciousness in the epochs of Enlightenment and Romanticism. A number of speakers linked cultural processes and phenomena with the national and social aspects of the development of the Slav peoples and with the evolution of West European philosophical and political thought. The papers by R. Auty (Great Britain), E. Georgiyev (Bulgaria) and S. Graciotti (Italy) drew on materials related to literature, the papers by M. Klimowicz (Poland) and K.-D. Grothusen (FRG)—on materials related to the theatre and historiography. The general problems of Slav-German cultural ties of the Enlightenment were discussed by A. Mylnikov (USSR) who outlined two zones of such contacts: German-Polish-Russian and German-West Slav-South Slav. The papers devoted to Slav romanticism conclusively showed its exceptionally distinctive character and high artistic value (D. Durišin—Czechoslovakia, H. Schmidt—GDR).

The second section discussed the process of the formation of realism in the art of the Slav peoples and its influence on the spiritual life of the West European countries. In the centre of attention were questions connected with the development of Russian classical literature, especially the novel which figured in the reports of G. Fridlender (USSR) and M. Partridge (Great Britain). A kind of "subsection" was represented by the papers dealing with the work of Leo Tolstoy (K. Lomunov—USSR, W. Edgerto—USA, E. Dieckmann—GDR and others). Considerable interest was aroused by I. Neupokoyeva's (USSR) generalised theoretical approach to definition of the place (typological correlation) and role (artistic and ideological contribution) of the 19th-century Slav literatures in the European historical and literary context.

The third section focused on problems of Slav cultures at the present stage of the historical development, ushered in by the Great October Socialist Revolution. The central themes were: new trends in the literature and art of the Slav peoples, Slav cultures in the anti-fascist struggle, the cultural achievements of the Slav peoples and their international significance. A. Flaker (Yugoslavia) gave a general characterisation of Slav literatures after 1917, S. Nikolsky (USSR) spoke of the place of artistic discoveries of West and South Slav writers of the 20th century in world art, L. Robel (France) of new developments in the theory and practice of 20th-century Slav art, G. Lomidze (USSR)—of the multinational Soviet literature as a factor of contemporary artistic progress. Many of the papers sparked off lively discussion. Thus, for instance, some of the propositions in an interesting paper by A. Wright (Canada) on the national and the universal in the work of M. Bulgakov were further spelt out by the Soviet scholars I. Belza and Ya. Zasursky in the discussion that followed. Summarising the work of the section, Yu. Bogdanov (USSR) underlined that in the epoch of the unprecedented accelerated advance of human civilisation the interaction and mutual enrichment of cultures is becoming a major catalyst of world artistic progress.

During the Berlin Conference a momentous event took place which would greatly promote Slavonic studies: an International Association for the Study and Propagation of Slav Cultures was founded to realise the UNESCO Project for the Study of Slav Cultures and the recommendation of the 18th Session of the UNESCO General Conference. The Association adopted its charter and elected as its first president the eminent Soviet scholar, D. Markov, Corresponding Member of the USSR Academy of Sciences. The purpose of the Association, which is guided in its activities by the ideas of peace, humanism and mutual understanding among peoples, by the aims and principles of UNESCO, is the promotion of the comprehensive study of Slav cultures, the worldwide dissemination of knowledge about the Slav peoples and their contribution to the development of world civilisation.

Yu. Ritchik

THE BYZANTINE WORLD: 1071-1261

The 15th International Congress of Byzantine Studies, held in Athens in September 1976, drew nearly 800 delegates from 36 countries. The Soviet delegation consisted of 24 Byzantine scholars from Moscow, Leningrad, Yerevan and Tbilisi. This Congress in a country that was once the core of the Byzantine Empire was a notable event in Greece's socio-political and cultural life and attracted considerable public attention.

The general subject of the Congress was the Byzantine world from 1071 to 1261. This was one of the most intricate periods of the Empire's history and was marked by a series of foreign political catastrophes and important internal processes that affected the most diverse aspects of the life of Byzantine society.

The Congress sittings were held in sections: I) History, II) Language, Literature, Philology, III) Art and Archaeology, IV) Social Thought, Philosophy and the History of Thought, and V) Cyprus in the Byzantine World.

In the first section there were three major subjects that were discussed from different angles: "The Centrifugal and Centripetal Forces in the Byzantine World in the Period From 1071 to 1261" were considered in their socio-economic (Z. Udaltsova, A. Kazhdan—both of the USSR; V. Hrochova—Czechoslovakia) and ideological and socio-ethical aspects (H. Ahrweiler—France), and also from the standpoint of the impact of decentralisation in various areas of the Byzantine Empire (J. Karayannopoulos—Greece; N. Oikonomidès—Canada; D. Nicol—Britain). "The Composition and Movement of the Population of the Byzantine Empire" was discussed in relation to the population of Bulgarian regions (D. Angelov—Bulgaria), Armenia (R. Bartikyan—USSR), Asia Minor

(S. Vryonis—Greece), to the Vlachs (E. Stanescu—Rumania) and to other peoples in the Empire generally (P. Charanis—USA); "Symbiosis in the Latin States Formed on Byzantine Territory" was analysed in its social, economic, religious and cultural aspects (G. Litavrin—USSR; D. Jacoby—Israel; F. Thiriet—France; P. Topping—USA; A. Bryer—Britain).

Researchers showed a perceptibly heightened interest in the Byzantine Empire's Black Sea regions, particularly the Trebizond Empire and Kherson; some papers discussed Byzantine-Russian contacts and Byzantine-Armenian and Byzantine-Georgian relations.

The most noteworthy papers presented in the second section dealt with the evolution of a new Greek language from the mediaeval Byzantine Greek (P. Wirth—FRG; W. Hörandner—Austria; J. Grosdidier de Matons—France), the genesis of modern Greek dialects (N. Andriotis—Greece; R. Browning—Britain) and the material, social and economic conditions of cultural life in Byzantium (P. Canart—Italy; B. Fonkich—USSR; A. Guillou—France).

The papers on monumental Byzantine painting (V. Djurić—Yugoslavia; J. Lafontaine-Dosogne—Belgium; L. Hadermann-Misguich—Belgium) were of fundamental importance for the elaboration of the problems considered in the third section. A wide-ranging, generalising paper was read on the basic trends of the development of minor forms of Byzantine art in the 12th-13th centuries (A. Bank—USSR).

The important question of the crisis of the Byzantine political doctrine of imperial power and its various effects (J. Meyendorff—USA) and the crucial problem of the penetration of Byzantine culture and civilisation after 1204 into Central Europe (J. Irmscher—GDR), the Slavic countries (I. Duichev—Bulgaria; B. Ferjančić—Yugoslavia; D. Obolensky—Britain), and Western Europe (A. Pertusi—Italy) were discussed in the fourth section.

Cyprus received much of the Congress' attention: the determination of its role as a crossroad and as the ethnical and socio-cultural frontier of the Byzantine world (C. Mango—Britain; T. Papadopoullos—Cyprus); law and the Frankish institutions on Cyprus (J. Richard—France; P. Zepos—Greece; N. Svoronos—France); the evolution of the mediaeval Cypriot dialect (M. Christodoulou—Cyprus); early Christian art on Cyprus (Ch. Delvoye—Belgium; A. Megow—Greece; A. Parageorgiu—Cyprus).

In addition to the work of the five sections there were general plenary sittings of *Instrumenta Studiorum*, which discussed papers on the progress in compiling a dictionary of Byzantine antiquities, *Le Nouveau Ducange* (a dictionary of Byzantine Greek), *Corpus Fontium Historiae Byzantinae*, a prosopographic lexicon of Paleologue times, and so on.

In the intervals between morning and evening sittings there were lectures by leading Byzantine scholars: "Byzantine Studies Today" (H.-G. Beck—FRG), "The Empress Irene the Athenian" (S. Runciman—Britain) and others. The Soviet film "Byzantine Art in Collections in the Soviet Union" won acclaim.

At the Congress there was an international exhibition of books (the latest publications on Byzantine studies), an exhibition of manuscripts from the collection of the National Library of Greece, and exhibitions of Byzantine frescoes and Cypriot icons.

The general assembly of the International Committee of the Byzantine Studies Association elected H. Hunger, President of the Austrian Academy of Sciences and Director of the Byzantine Institute at Vienna University, as President of the Association, and M. Chatzidakis as its General Secretary. Z. Udaltsova, D. Sc. (Hist.), Chairman of the Byzantine Studies Section of the National Committee of Historians of the USSR, was elected Vice-President of the Association from the USSR.

The Congress took place in a businesslike, friendly atmosphere and showed, as was stated by the Association's Honorary President P. Lemerle of France, who summed up the work of the Congress at its closing session, that notable progress had been made in promoting and deepening Byzantine studies.

The 16th International Congress of Byzantine Studies is to be held in Vienna in 1981.

R. Nasledova,
Cand.Sc. (Hist.)

CONFERENCE OF TURKOLOGISTS

An all-Union Turkological Conference sponsored by the USSR Academy of Sciences and the Academy of Sciences of Kazakhstan was held in Alma Ata in September 1976. It was attended by more than 500 Turkologists of the Soviet Union and also by scholars from the Federal Republic of Germany, the German Democratic Republic, Poland, Sweden, Turkey and the USA.

The importance of this Conference was determined by the fact that the Turkic peoples in the Soviet Union are only outnumbered by the Slavic peoples. The study of Turkic languages and of the literatures, cultures and history of the Turkic peoples of the USSR, primarily the solution of linguistic problems, is a major factor of socio-political and cultural progress.

The Conference was timed to the 50th aniversary of the First All-Union Turkological Congress (1926, Baku) and dedicated to the 60th anniversary of the Great October Socialist Revolution, which played a great transformative role in the life of the peoples of the East. The range of questions examined at the Conference largely mirrored the results of studies in all spheres of Soviet Turkology over the past half-century.

In his opening speech at the Conference B. Tulepbayev, Vice-President of the Academy of Sciences of Kazakhstan, noted that it marked the flowering of the science and culture of the Turkic peoples achieved as a result of the Leninist nationalities policy in the Soviet East.

Four papers were read in the plenary session. In a paper "Turkic Linguistics in the USSR Today—Results and Problems" Academician A. Kononov said that with the drawing of the Turkic peoples of the USSR into socialist construction Turkology raised a problem of historic significance—that of elaborat-

ing the norms of national languages on the basis of dialects and of bringing the old written languages and the newly evolved literary languages into conformity with these norms; the creation of alphabets for languages which previously had none; and helping to improve a system of education in the native language. In carrying out these tasks post-revolutionary Turkology consistently and creatively applied Marxist-Leninist methodology, considerably enlarged its field of study and drew many representatives of the Turkic peoples into the study of Turkic languages and the literatures and history of these peoples.

The development of the Turkic languages of the USSR since the revolution was analysed in a work written by a team of eminent Turkic scholars in the Union republics: Members of the Kazakh Academy of Sciences S. Kenesbayev and A. Tursunov, Corresponding Member of the Turkmenian Academy of Sciences B. Chariyarov, Member of the Uzbek Academy of Sciences Sh. Shaabdurakhmanov, and Member of the Azerbaijanian Academy of Sciences M. Shiraliev. The aesthetic enrichment of Soviet multinational literature was outlined by Corresponding Member of the USSR Academy of Sciences G. Lomidze.

In a paper headed "A Study of the History of the Turkic Peoples of the USSR in Soviet Times", Academician A. Nusupbekov of the Kazakh Academy of Sciences pointed out the need for raising the general theoretical and ideological level of research, for a more profound analysis of data accumulated by science and urged to surmount idealisation of the past of Turkic peoples.

Following the plenary session, the work of the Conference proceeded in sections: linguistics, on the theme "Soviet Turkic Studies and the Development of Turkic Languages in the USSR"; literary criticism, on the theme "Turkic Literatures—History and the Modern Literary Process"; history, on the theme "Ethnic and Historico-Cultural Contacts of the Turkic Peoples of the USSR". A total of 312 papers were read in the three sections (178 in the linguistics section, 72 in the literary criticism section and 62 in the history section).

Linguists conferring in the six subsections examined a number of urgent problems springing from the current comparative-historical studies in the phonetics, grammar and lexicology of the Turkic languages. Considerable attention was given to the correlation of descriptive, historical, comparative-historical and comparative-typological linguistics and the attending extremely urgent problem of method in Turkic linguistics (including the use of interdisciplinary methods and special procedures). General theoretical problems of the study of the grammar of Turkic languages were examined. In some cases debatable questions of grammar (parts of speech, parts of sentences, sentence structure and so on), lexicography, lexicology (principles of compiling etymological, explanatory, bilingual and other dictionaries, areal studies in lexicon) and phonetics (syllable theory, phonetic trends in the Turkic languages and so on) were specified. Problems of the history of the Turkic languages, its division into periods, paleography, runology and textology were discussed.

The increasing awareness of the need for a differentiated approach to the interpretation of linguistic data of written sources explained the heightened interest that was shown by researchers in the correlation of the historical grammar of Turkic languages, historical dialectology and history of written literary languages, in the methods of interpreting the linguistic data of texts and in the study of oral literary (folklore) forms of languages. Linguists spoke on the problem of style development, stylistic differentiation of modern Turkic literary languages and interaction between the Russian and Turkic languages.

Some papers generalised the experience of monographic studies of dialects and the compilation of dialect atlases for many Turkic languages and dealt with inter-dialect and inter-language interaction, areal studies and historical dialectology.

In two of the subsections literary critics heard reports on general theoretical questions of Soviet literary criticism (including the development of genres, poetics and versification in Turkic literatures), socialist realism in multinational Soviet literature, and the specific ways in which socialist realism is manifested in individual Turkic literatures. The relationship and mutual enrichment of the literatures of the peoples of the USSR were dealt with at length. The papers analysing the relationship between literature and folklore showed the role of folklore traditions in the formation of Turkic literatures, recently put into writing.

The history section had two subsections. Some of the papers discussed the inter-ethnic links of Turkic peoples—both regional (the region of Central Asia and Kazakhstan) and international (with the peoples of Siberia or the Caucasus) on the basis of archaeological, historico-linguistic and ethnographic material. Papers dealing with ethnic history discussed the ethno-cultural contacts of the Turkic peoples of Western Asia, Eurasia, Eastern Europe and the Caucasus in the early Middle Ages; the Late Turkic ethnic component in the composition of the Kumyks; the history of the Turkisation of the population of Tuva, of the Huns in Transcaucasia, and the Kipchaks in Georgia; inter-ethnic links and history of the formation of the Turkic peoples in the late Middle Ages.

A number of papers dealt with the socio-economic system of nomadic peoples, with the links between nomadic herdsmen and the agricultural population of the oases of Central Asia and Kazakhstan and with the system of kinship within a large family context among the Turkic peoples.

Scholars devoted close attention to the history of Ancient Turkic writing and culture of Central Asia. They discussed cardinal questions related to the genesis and evolution of Runic, Sogdian and other ancient systems of writing in Central Asia, Kazakhstan, Europe and the Caucasus.

The creative discussion based on achievements in the study of Turkic languages, literatures, folklore and the history and ethnography of Turkic peoples made it possible to determine and specify the most important orientations for the further development of Turkology.

The Conference adopted the relevant recommendations in all the three sections and passed a decision to hold similar conferences once in four years.

G. Blagova,
Cand. Sc. (Philol.)

CONFERENCE OF LECTURERS OF SOCIAL SCIENCES

This conference, held in Moscow in September 1976, discussed the ways and means of promoting the social sciences, improving instruction in these disciplines and educating students in the light of the decisions passed by the 25th Congress of the CPSU.

It was attended by rectors, secretaries of Party organisations at institutions of higher learning, social scientists, heads of the departments of science and educational establishments at the Central Committees of the Communist parties of the Union republics, and territorial and regional Party committees, ministers of higher and specialised secondary education of the Union republics and the heads of central ideological institutions.

M. Zimyanin, Secretary of the CPSU Central Committee, read a paper entitled "The 25th Congress of the CPSU and the Tasks of Social Sciences Chairs", in which he said that the immense significance of moulding the new man, the builder of communism, had been underscored at the Congress.

The Congress proposition on a comprehensive approach to education was of fundamental importance for institutions of higher learning. The inculcation of communist ideas and convictions among students was one of the major orientations of the Party's ideological work, he said.

He noted that in its work and decisions the 25th Congress had given considerable attention to science, to the need to concentrate the efforts of the Party's theoretical cadres and of social scientists on studying the key problems of Soviet society's economic and socio-political development and on examining, together with the fraternal parties, the fundamental questions of the development of the world socialist system, the revolutionary liberation movement and present-day world development as a whole.

The basic task set before Soviet science by the 25th Congress was to continue expanding and deepening research into the laws of nature and society, increase the contribution of scientists to the solution of pressing problems of building the material and technical basis of communism, speed up scientific and technological progress and the growth of efficiency in industry, help raise the living standard and cultural level of the people and form the communist outlook and disseminate it among the working people.

He emphasised that the entire ideological wealth and essence of the Congress decisions had to be got across to all Soviet students.

Precisely this was the task of teachers at institutions of higher learning, who comprised the absolute majority (80 per cent) of the social scientists in the USSR.

Zimyanin said that the efforts of scientists at social sciences research institutes and of social scientists at institutions of higher learning had to be concentrated on research that could make a new contribution to the elaboration and solution of problems of communist construction.

A paper headed "The 25th Congress of the CPSU and the Task of Enhancing the Quality of the Training of Skilled Specialists" was read at the Conference by V. Yelyutin, Minister of Higher and Specialised Secondary Education of the USSR.

Academician P. Fedoseyev, Vice-President of the USSR Academy of Sciences, read a paper entitled "The 25th Congress of the CPSU and the Tasks of Research in the Social Sciences".

The discussion of the papers read at the Conference was continued in the sections, which then considered the drafts of new curricula for courses on the history of the CPSU, Marxist-Leninist philosophy, political economy and scientific communism. The participants in the Conference spoke of the work of their chairs.

The speakers at the plenary sittings and sections advanced concrete proposals for enhancing the efficacy and quality of the study process, improving the entire system of Marxist-Leninist instruction, shaping the communist outlook among specialists and helping them to take a more active part in social life.

CHRONICLE

* The *3rd Congress of the International Association of Teachers of the Russian Language and Literature* (MAPRYAL), held in Warsaw, attracted nearly 2,000 participants from 49 countries. They heard and discussed some 800 papers. The Soviet delegation was led by N. Sofinsky, Deputy Minister of Higher and Specialised Secondary Education of the USSR. The plenary sitting heard a paper entitled "Development Trends of Modern Russian" by the Association's General Secretary V. Kostomarov. The Congress continued its work in ten sections which discussed the methods of teaching Russian as a foreign language: linguistic, psychological, psycholinguistic and regional geographic principles of the study of Russian; problems of teaching at secondary schools and at institutions of higher learning—to experts on the Russian language and literature and to non-experts; the teaching of Russian and Soviet literature. At the Congress there was a round-table discussion of the theme "Study of the Russian Language and Literature in Countries and Regions of the World". At this Congress a comprehensive approach was suggested for the first time to the teaching and study of Russian as a foreign language. The Congress made a considerable contribution to the theory of teaching the Russian language and foreign languages generally. Academician M. Khrapchenko of the USSR was again elected President of the International Association of Teachers of the Russian Language and Literature. The Association's Fourth Congress is to be held in Berlin in 1979.

* "Aesthetics, Daily Life and the Arts" was the subject of the *8th International Congress of Aesthetics* at Darmstadt, FRG, attended by nearly 300 scholars from 30 countries. At its plenary sittings it heard "The Tasks of Aesthetics in the Age of Technology" by T. Imamichi of Japan, "The Subject-Matter of Aesthetics and Artistic Creativity" by K. Dolgov of the USSR, "Ethnology and Art" by P. Zarev of Bulgaria, "Vital Significance of Art" by G. Wolandt of the FRG, and other papers. The discussions in the sections dealt with important problems of the development of aesthetics and

This review covers events of August-October 1976 in Moscow (unless stated otherwise).

its relation to life and art, including "The Subject-Matter of Aesthetics", "Aesthetic Categories", "Aesthetics and Daily Life", "Aesthetics and the Age of Technology", "History of Aesthetics", "Sociology of Art", "Creativity and Perception", "Art Education", "World Art", and "Realism". It was planned to hold the 9th International Congress of Aesthetics in 1980.

* Scholars from more than 70 countries attended the *9th International Congress of Prehistoric and Protohistoric Sciences* at Nice, France. In view of the fact that the theme of the Congress was linked mainly with Stone Age history the Soviet delegation, led by R. Munchayev, Deputy Director of the Institute of Archaeology of the USSR Academy of Sciences, included a large group of experts on the Paleolithic. In addition to the Soviet delegation, the Congress was attended by the Soviet paleogeographers Academician I. Gerasimov, Director of the Institute of Geography of the USSR Academy of Sciences, and A. Velichko, Section Head at the same institute, who were invited as guests by the Organising Committee. The following papers were read by Soviet scholars: "The Lower Paleolithic of Central Asia According to Data from the Karatau I Site" (V. Ranov), "The New Upper Paleolithic Sites at Achinskaya and Malaya Siya" (V. Larichev), "Early Industries of Eastern Europe and the Caucasus" (V. Lyubin), "Man's Way of Life and Dwellings of the Upper Paleolithic in the Transcaucasus" (B. Eritsyan). In the Neolithic section N. Merpert and R. Munchayev presented an interesting paper on the work of a Soviet archaeological expedition in Iraq which investigated a group of early agricultural settlements dating from the seventh-fifth millennia B.C. in Mesopotamia.

* The *4th World Congress for Rural Sociology*, held in Torun, Poland, was devoted to the theme "The Integrated Development of Human and Natural Resources: the Contribution of Rural Sociology". It was attended by over 600 scholars from 74 countries. The Soviet delegation was led by Professor Yu. Arutyunyan. The work of the Congress proceeded in 21 thematic seminars. Considerable attention was attracted at the Congress by papers presented by scientists from the socialist countries on the experience of socialist socio-economic transformations in the countryside and on the contribution of Marxist-Leninist science to these transformations.

* The *3rd International Congress of Mongolists* in Ulan Bator was attended by some 200 representatives from the scientific centres in 24 countries and international organisations. The Congress participants included many outstanding international specialists in Mongol studies. The Soviet delegation was led by Academician A. Okladnikov and Professor V. Solntsev. At a plenary sitting the Congress participants heard the paper "On the Question of Interaction of Society and Science in the Mongolian People's Republic", delivered by B. Shirendyb, President of the Mongolian Academy of Sciences. In two sections they also heard and discussed the papers on problems of Mongolia's history, ethnography, archaeology, philosophy, economics, philology and art criticism. The third section which dealt with the theme "Mongolia and the Countries of Central Asia" heard the paper by Academician A. Okladnikov "Ancient History of Central Asia and the Results of Soviet-Mongolian Cultural Expedition". All in all, some 140 papers were discussed at the Congress.

* The *48th Congress of Italian Historians*, held in Mantua, dealt with the historical studies of the Risorgimento movement over the past 70 years in Italy and other countries. More than 800 historians, including some 30 foreign guests, took part in the work of the Congress. The latter included the Soviet historian V. Nevler. In a report that evoked immense interest he spoke of the response in Russia to the national liberation movement in Italy, of the broad sympathy in Russia for Garibaldi, Mazzini and their associates, of the Russian followers of Garibaldi and of the support (including material assistance) rendered by the Russian revolutionary democrats to the Italian revolutionaries. He said that the study of the Risorgimento movement by Soviet historians is pursued in the tradition of the great Russian revolutionary democrats, who had written many stirring books about the national liberation movement in Italy. The interest that Italian historians display in Soviet historiography was shown also in the fact that a collection of articles by V. Nevler, published earlier in the Soviet Union and Italy, appeared in Italy on the eve of the Congress.

* More than 700 scientists from many countries attended the *8th Congress of the Turkish Historical Society* (Türk Tarin Kurumu) in Ankara. Papers were read by all the 13 members of the Soviet delegation. The most significant of these papers were "The Role of the Masses in the National Liberation Struggle in Turkey" by A. Shamsutdinov (head of the delegation), "The Role of the Turkish Constitutionalists of the 1860s-1870s in the History of Turkish Socio-Political Thought" by Yu. Petrosyan, "The Leninist Principles of Foreign Policy and Present Soviet-Turkish Relations" by B. Potskhveria and "The Study in the Soviet Union of the Kemalist Principle of Etatism" by I. Alibekov.

* Over 130 papers were heard and discussed by some 500 participants in the *7th International Congress of Iranian Art and Archaeology*, held in Munich. Academician B. Gafurov, Director of the Institute of Oriental Studies of the USSR Academy of Sciences, and G. Bongard-Levin, D. Sc. (Hist.), jointly presented a paper entitled "New Archaeological Excavations in Central Asia".

* The *International Conference on the Problem of a New World Economic Order*, held in Algiers on the initiative of a group of scientists of the Club of Rome, attracted nearly 300 participants—leading scientists, political personalities and statesmen—from 56 countries and a number of international organisations. This was the first conference sponsored by the Club of Rome to be attended by a broadly representative body of scientists from the socialist countries, including the Soviet Union. The Conference discussed a report drawn up by a group of economists headed by the Dutch scientist Jan Tinbergen. At the discussion the main themes were: the establishment of fair prices in world trade, democratic control over the settlement of currency and financial problems, the curbing of the multinational monopolies, the need for progressive socio-economic changes both in the developing and in the capitalist countries, and the importance of détente and disarmament for normalising the entire system of political

and economic relations. The capitalist "models" of the world's future structure, suggested by some participants in the Conference, failed to win any appreciable support. The Conference noted that the Soviet Union and other socialist countries were taking energetic steps in support of the legitimate demands of the developing countries for the eradication of all forms of their exploitation by capitalist states and for the restructuring of international economic relations on the basis of equality. Close attention was received by the paper read by Corresponding Member of the USSR Academy of Sciences O. Bogomolov, head of the Soviet delegation and Director of the Institute of the Economy of the World Socialist System of the USSR Academy of Sciences. He spoke highly of the role played by the developing countries in the struggle for a new economic order and declared that the stand of the socialist and developing countries largely coincided in the matter of improving the entire system of international economic relations.

* The *International Conference on the Development Prospects of Slavonic Onomastics*, sponsored by the Institute of Linguistics of the USSR Academy of Sciences, attracted 100 scholars from Bulgaria, Czechoslovakia, the GDR, Hungary, Poland, the Soviet Union and Yugoslavia. Most of the Conference's work proceeded in three sections: "Slavonic Onomastic Areas", "Onomastic Dictionaries", and "Slavonic Onomastics in the Lingual Environment". Further, there were two plenary sessions and an extended sitting of the Onomastics Commission of the International Committee of Slavonic Philologists. Fifty-four papers and communications were heard. Questions concerning onomastic terminology were also examined: the definitions of area, system and adaptation were considered, and there was a discussion of organisational questions of further cooperation. Before the Conference opened a questionnaire that included key points of research was handed out to the participants. The replies were summed up in special reports made to the relevant sections. The Conference recommended the organisation of onomastic groups at all research centres and institutions of higher learning engaged in the humanities in the participating countries; the formation of a working group for the compilation of a *Slavonic Onomastic Atlas*; and collaboration with scientists of all other countries where this theme is studied or which have relevant materials.

*The *International Symposium on Philosophy in the Life of Nation*, held in New York and dedicated to the USA's bicentennial, was attended by more than 300 American scholars and also scholars from many other countries. A paper headed "The Popular Masses and Social Progress" was presented by V. Denisov, Head of the Section of Philosophical and Methodological Problems of Social Science at the Institute of Philosophy of the USSR Academy of Sciences.

* *The colloquium on the theme "Europe During the Early Years After the Second World War"*, held in Varna, Bulgaria, and sponsored by the Association of Contemporary European History jointly with Bulgarian historians, was attended by 45 scholars from Bulgaria, Czechoslovakia, France, the FRG, the GDR, Britain, Greece, Italy, Rumania, Switzerland and the USSR. The colloquium was opened by the French

scientist F. L'Huillier, founding member and president of the Association since its foundation in 1966. The Soviet participants presented the following papers: "The Democratic Alternative in Western Europe After the Second World War" (N. Komolova), "The USSR and Europe's Economic Rehabilitation After the Second World War" (L. Nezhinsky), "Socio-Political Development of the Countries of Southeastern Europe After the Second World War" (L. Valev), "The USSR and Problems of Peace Settlement in Europe After the Second World War" (A. Chubaryan, head of the delegation), "Byelorussia's Participation in the Efforts of Soviet Diplomacy to Safeguard Bulgaria's Sovereignty and Independence at the 1946 Paris Peace Conference" (O. Meltser) and "Some Questions of Europe's Postwar Development in Bourgeois Foreign Policy Conceptions" (V. Shilov).

* *The symposium "European Cooperation and the Third World"* sponsored in Vienna by the International Institute for Peace and the Institute of World Economy of the Hungarian Academy of Sciences, was attended by scientists from Austria, Bolivia, Bulgaria, Czechoslovakia, Egypt, Finland, the FRG, the GDR, Hungary, India, Iraq, Italy, Japan, Poland, Rumania, Sweden, the USSR and also by representatives of six international organisations. Papers were presented by G. Adler-Karlsson of Denmark ("The Role of Inverted Utilitarianism in the New World Order"), M. Simai of Hungary ("The Final Act of Helsinki and the Third World"), E. Antola of Finland ("The European Community and Africa. A Neo-Colonial Model of Development") and V. Pavlov of the USSR ("European Socialist Countries' Contribution to the Renewal of the International Economic Order Conducive to the Development of World Peace"). The Symposium discussed the possible ways and means of promoting economic and social progress in the developing countries.

* Representatives of Czechoslovakia, Guatemala, India, Kenya, Mali, Mexico, Nigeria, Pakistan, Peru, Singapore, the USSR and the UNESCO Secretariat took part in the *UNESCO International Symposium on the Publication of Books in the Various Languages of Multilingual Countries* held in Alma Ata. Much interest was aroused by a paper on the publication of books in the languages of the peoples of the USSR.

* A *meeting of vice-presidents of the academies of sciences of the socialist countries on topical problems of the development of the social sciences* was held in Warsaw. Attended by representatives of Bulgaria, Cuba, Czechoslovakia, the GDR, Hungary, Mongolia, Poland, Rumania, the Soviet Union and Vietnam this meeting considered a long-term programme for the further expansion of cooperation among scientists of the socialist countries, particularly in the work on important theoretical problems of socialist and communist construction, the promotion of the world revolutionary process and the strengthening of the principles of peaceful coexistence in international relations.

* The *3rd Meeting of Representatives of Journals of CMEA Countries*, held in Sofia, was devoted to the theory and practice of economic planning. It discussed the results of the work of these journals on problems concerning socialist economic

integration, the improvement of planning and management and the economic development of individual socialist countries, and also cooperation between the journals. The meeting took note of the headway in the promotion of bilateral and multilateral contacts between journals and recommended the further expansion of these contacts.

* The *Soviet-Rumanian Commission of Historians* held its sessions in Moscow and Samarkand to discuss the national liberation movement in the Balkans in the latter half of the 19th century, Russo-Rumanian relations and the war of 1877-1878. Soviet historians presented the following papers: Academician A. Narochnitsky—"The Balkan Crisis of 1875-1878 and the Great Powers"; M. Zalyshkin and E. Chertan—"Foreign Policy Aspects of Rumania's Struggle for Independence"; I. Rostunov—"The Significance of the Russo-Turkish War of 1877-1878 for the Liberation of the Balkan Peoples"; V. Grosul—"The Links of Russian Revolutionary Democrats With the Liberation Movement in the Balkans"; E. Spivakovsky—"The Combination of Social and National Tasks in the Rumanian Liberation Movement". The head of the Rumanian delegation, Corresponding Member of the Academy of the Socialist Republic of Rumania Şt. Ştefanescu devoted his paper to the place and role of the war of 1877-1878 in the struggle of the Rumanian people for freedom and independence; V. Axenciuc—to Rumania's economic development in the latter half of the 19th century; N. Adăniloaie, V. Ionescu and I. Iacoş—to various aspects of Rumania's participation in the war: the operations of Rumanian troops, their cooperation with the Russian army, the role of the masses in the war, the attitude of the working-class and socialist movement in Rumania, and the assessment of the liberation movement of the Rumanian people given in the works of Marx and Engels; Gh. Ioniţă—to the achievements with which socialist Rumania is marking the centennial of state independence.

* The *Commission of Soviet and Czechoslovak Historians* which marked its tenth anniversary in 1976, held another session in Brno, Czechoslovakia, on the basic problems of the development of the working-class movement in Russia and Austria-Hungary in the last quarter of the 19th and the early 20th century. The Soviet delegation presented five papers: L. Minayev—"The Basic Tendencies of the Development of the Social-Democratic Movement in the Late 19th and the Early 20th Century"; S. Kostin—"Lenin and the Formation of a New Type of Party"; S. Tyutyukin—"International Significance of the First Russian Revolution of 1905-1907"; V. Laverychev—"The Struggle Between Two Tendencies in the Working-Class Movement of Russia During the First Russian Revolution"; I. Ignatenko—"The Emergence of Leninism and Its Significance to the Development of the Working-Class Movement". Czechoslovak historians made seven reports: A. Faltys—"The Main Trends of the Development of the Working-Class Movement in the Period of Capitalism's Growth Into Its Imperialist Stage"; F. Jordan—"The Appearance of the Social-Democratic Party in Cisleithania"; P. Hapak—"The Development of the Socialist Movement and the Appearance of the Social-Democratic Party in Hungary

(1866-1890)"; O. Kodedova—"The First Russian Revolution and the Working-Class Movement in Cisleithania in 1905-1907", M. Piš—"The Revolution of 1905-1907 in Russia and Its Impact on the Working-Class Movement in Slovakia"; J. Kolejka—"The Organisation, Ideology and Tactics of the Social-Democratic Movement in Cisleithania in 1889-1914"; F. Havliček—"The Historic Significance of Leninism to the Working-Class Movement in the Czech Lands and Slovakia".

* "The Role of the State in Economic Development" was the subject of the *Soviet-Indian Symposium* attended by representatives of the Soviet-Indian Friendship Society (SIFS) and the Indo-Soviet Cultural Society (ISCUS). Following the opening address by Academician A. Rumyantsev and a message of greetings from K. P. S. Menon, President of the Indo-Soviet Cultural Society, the main papers were presented by R. C. Mehrotra, head of the Indian delegation and Vice-Chancellor of Delhi University ("Scientific and Technological Revolution, Its Influence on Enhancing the Role of the State in the Economy. Indian Experience") and N. Goldin, Minister of the USSR and President of the Soviet-Indian Friendship Society ("Economic Development of the Soviet Union in the Tenth Five-Year Plan and the Prospects of Soviet-Indian Economic Cooperation"). The Symposium then continued its work in two sections: "The Regulation Role of the State" and "The State Sector in the Economy", at whose sittings papers were presented by seven Indian and eleven Soviet scientists.

* Prominent Soviet and British civic personalities and representatives of scientific, cultural and business circles participated in the *Soviet-British Round Table* sponsored by the Institute of World Economy and International Relations and the Royal Institute of International Affairs. From the British side the participants were A. Shonfield, Director of the Royal Institute of International Affairs, J. Davies, MP, J. Roper, MP, Ch. Tugendhat, MP, Lord Kearton, Lord Trevelyan, R. Grantham, M. Kaser, A. Knight and I. Smart. The Soviet delegation included Academician N. Inozemtsev, Director of the Institute of World Economy and International Relations of the USSR Academy of Sciences, Deputy of the Supreme Soviet of the USSR, A. Bovin, *Izvestia* political observer and Deputy of the Supreme Soviet of the RSFSR, V. Trukhanovsky, Corresponding Member of the USSR Academy of Sciences, doctors of science O. Bykov, V. Martynov, M. Maximova, V. Shenayev, G. Skorov, V. Zhurkin, and ranking officials of foreign economic departments. Views were exchanged on cooperation between the two countries with the purpose of furthering the easing of international tension, promoting peaceful cooperation in Europe and limiting the arms race, including a cutback of armed forces and armaments in Central Europe. The Round Table examined the further possibilities and prospects for economic relations between the USSR and Great Britain and also the participation of the two countries in international economic cooperation. The discussions were held in a business-like, constructive atmosphere.

* The *Soviet-Finnish Symposium on socio-economic history*, held in Turku, Finland, considered two sub-

jects: the agrarian development of Russia and Finland in the 15th-19th centuries and the working class in Russia and Finland in the latter half of the 19th and the early 20th century. The Soviet participants presented the following papers: "Problems of Agrarian History of North Russia in the 15th-16th Centuries" (N. Nosov), "The Agrarian Development of Estonia in the 16th-17th Centuries" (E. Tarvel), "The Workers of St. Petersburg in the Late 19th and the Early 20th Century" (S. Potolov), "The Formation of the Working Class of Estonia From the Beginning of the 19th Century to 1917" (R. Pullat), "Industrial Workers of Finland in the First Half of the 19th Century" (A. Laidinen) and "A. M. Kollontai, Historian of the Working Class of Finland" (V. Roginsky). The papers from the Finnish side were: "On the Question of Feudalism" (V. Niitemaa), "Estates and Estate Peasants in Southwestern Finland in Feudal Times" (M. Tornberg) and "Correlation of Social Development and Migration in the Early Period of Industrialisation" (E. Vainio).

* Jointly with the USSR Academy of Sciences and the Georgian Academy of Sciences the problem commission for multilateral cooperation among scientists of socialist countries in the study of the history of the Great October and subsequent socialist revolutions sponsored *an international symposium on the "Historical Experience of the Great October Revolution and Its International Significance"*. The Symposium, held in Batumi, was attended by more than 80 historians, including more than 20 from Bulgaria, Czechoslovakia, the GDR, Hungary, Mongolia, Poland and Rumania. The Symposium heard and discussed 26 papers on important aspects of the experience of the Great October Socialist Revolution and on the general laws of the development of the socialist revolution. Papers and lectures were read by Academicians I. Mints and A. Narochnitsky, Corresponding Member of the USSR Academy of Sciences Yu. Polyakov and others. The Symposium gave considerable attention to problems of the present ideological struggle and to exposing the bourgeois falsifications of the experience and world-historic significance of the Great October Revolution.

* The *Scientific Conference on the Pressing Problems of the Ideological Struggle in the Light of the Decisions of the 25th Congress of the CPSU*, held by the Scientific Council of the USSR Academy of Sciences on the Problems of Foreign Ideological Trends, and by the USSR Znaniye Society, was attended by scientists from a number of institutes of the USSR Academy of Sciences, the Institute of Marxism-Leninism, the Academy of Social Sciences, the Higher Party School at the CPSU Central Committee, and some institutions of higher learning. The main report—"New Trends of the Ideological Struggle Between Socialism and Capitalism and Some Problems of the Development of the Social Sciences in the Light of the 25th CPSU Congress Decisions"—was delivered by Academician M. Mitin. The Conference then heard and discussed over 30 reports and communications.

* The *All-Union Conference of Historiographers* in Kalinin was attended by scientists of the institutes of history of the USSR Academy of Sciences, and lecturers from universities and pedagogical institutes. After the opening address by Academician M. Nechkina, Chairman of the Scientific Council of the USSR Academy of Sciences for the History of Historical Science, a paper was presented jointly by Corresponding Member of the USSR Academy of Sciences I. Kovalchenko and A. Sakharov, D. Sc. (Hist), under the heading "The 25th Congress of the CPSU and the Tasks in the Study and Teaching of Historiography". The papers read at the plenary sitting included "The Present State of the Study of the Historiography of Soviet Society", "The 25th Congress of the CPSU and the Urgent Problems of the Historiography of World History", "The Character of the Historiographical Introduction in Works on the History of the USSR", and "The Easing of Tension, Ideological Struggle and Bourgeois Historiography of the History of the USSR". The work of the Conference then proceeded in three sections: the pre-Soviet period, Soviet society, and world history.

BOOK REVIEWS

К. И. ЗАРОДОВ. *Три революции в России и наше время*. М., изд-во «Мысль», 1975, 603 стр.

K. I. ZARODOV, *Three Revolutions in Russia and Our Time*, Moscow, Mysl Publishers, 1975, 603 pp.

The author examines the dialectics of the revolutionary process in Russia in the light of the specific features of the epoch of imperialism and the transition from capitalism to socialism. He expounds the Leninist teaching on the development of the democratic revolution into a socialist revolution, which has been confirmed in practice, and analyses the driving forces of that revolution and the forms of revolutionary struggle, focusing particular attention in this connection on the leading role in the revolution of the working class and its militant vanguard, the Marxist party.

The experience of the three Russian revolutions is illuminated by the genius of Lenin. K. Zarodov convincingly shows how Leninist theoretical thought generalised the practical revolutionary actions of the masses arming them and orienting the activity of the militant vanguard of the working class. This was truly scientifically-substantiated revolutionary creativity based on a masterly application of dialectics and on the comprehension of the essence of social processes.

Numerous facts are cited showing the enduring value of the Russian revolutionary experience for the present-day anti-imperialist and anti-monopoly struggle. Thus, touching on the correlation between the peaceful (sometimes called the democratic) way to socialism and the non-peaceful form of transition to it, the author looks into this problem in the light of the historical experience of the October Revolution, and then analyses contemporary practice, dwelling, in particular, on the example of Chile. Opportunists of all stripes spare no effort to twist the meaning of the lessons of the Chilean revolution and especially to discredit the Leninist idea about the possibility of a relatively peaceful transition to socialism. As it was noted at the 25th Congress of the CPSU, the Chilean tragedy has by no means invalidated the Communist thesis about different possible ways of revolution, including a peaceful one, provided the necessary conditions exist for it. But it has also been a forceful reminder that the revolution must know how to defend itself.

The attempts to identify the peaceful way to socialism with the parliamentary way are called in question with good reason. The possibility of using parliament in the interests of revolution, the author writes, does not at all mean the possibility of a purely constitutional way to socialism. On the other hand, he goes on to say, Lenin and the Bolsheviks were always against absolutising and idealising armed violence and already in the early days of the existence of proletarian power did everything possible to reduce acts of violence, especially armed ones, to a minimum. But when the counter-revolutionaries unleashed White terror against the power of the workers and its leaders, revolutionary violence could be the only answer to this.

Speaking of the impossibility of mechanically utilising the experience of the Russian revolutions, all the concrete forms and methods that were used in Russia, K. Zarodov analyses the problems of the creative application of the common and profoundly international features that were revealed in the revolutionary experience of the Russian proletariat and its Leninist party.

In the process of the class struggle in this or that country, the revolutionary creativity of the masses, the author stresses, produces something new and inimitable; new revolutions always bring their own specific features into the world revolutionary development. They thus enrich world revolutionary experience and hence also the experience of the three revolutions in Russia in which the universal laws of revolution became embodied for the first time.

The world revolutionary process is today continuously expanding and becoming complicated, new masses of people are being drawn into the struggle for peace and socialism. The trend of developments constantly confirms that socialism has become a major factor of world progress. And this points with new force to the need to make a scrupulous study of the great experience of the revolutionary struggle of the Russian proletariat, which ended in the triumph of socialism.

E. Zhukov,
Academician

Советский Союз и Организация Объединенных Наций. 1966—1970. М., изд-во «Наука», 1975, 535 стр.

The Soviet Union and the United Nations. 1966-1970, Moscow, Nauka Publishers, 1975, 535 pp.

The Institute of the History of the USSR, Academy of Sciences of the USSR, has put out a book dealing with the Soviet Union's activities in the United Nations and touching upon a wide range of international issues. It was prepared by a group of researchers from the said institute, by professors and lecturers from various bodies of higher learning, and by officials of the USSR Foreign Ministry and other Soviet state establishments. The authors highlight the efforts of the USSR and other socialist countries to achieve a lasting peace, international security, disarmament and complete elimination of the vestiges of colonialism. They draw extensively on documents of Soviet foreign policy, of the United Nations and its various agencies such as the Security Council, the General Assembly, ECOSOC and UNESCO.

Founded in the years of the Second World War, this Organisation proclaimed in its Charter such basic democratic principles as the sovereign equality of all its members, the maintenance of international peace and development of friendly relations among nations based on respect for the principle of equal rights and self-determination of

peoples, the refrainment from the threat or use of force in international relations, the prohibition of racial discrimination.

The principle of peaceful coexistence of states with differing social systems advanced by Lenin has been fully realised in the United Nations.

The international situation in 1966-1970 was marked by the continuation of the cold war and the emergence of the tendency towards détente. Imperialism tried by force of arms to suppress the national liberation movement and carried out an unrestrained arms race. Meanwhile the USSR pursued its policy of peace and of strengthening international security, making full use of the United Nations to that end.

The consistent Soviet foreign policy, supported by the countries of the socialist community and the young progressive states, forced the imperialist circles to reconsider their foreign policy and opened up favourable prospects for a constructive solution of a number of pressing international issues.

A decisive role in this was played by the general change in the balance of forces in favour of socialism, peace and progress. This process took shape under the impact of the consolidation of the main revolutionary forces of our time—socialism, the international working-class and the national liberation movements—and exerted an ever stronger influence on the work of the United Nations. The book gives a detailed picture of all this.

The crucial role played by the USSR and other socialist countries in the United Nations was recognised, in particular, in the message of its Secretary-General to Leonid Brezhnev on the occasion of the 50th Anniversary of the Great October Socialist Revolution.

A considerable influx of new political forces—young independent states, and the growing cooperation between them and the socialist countries—led, in the opinion of the authors, to many useful UN decisions, especially on colonialism and neocolonialism.

They also note that today alongside the items of a political character the UN agenda ever more often includes socio-economic and legal issues as well as those concerning the world economic order, raw-material resources, environmental protection, the exploration of space and the sea-bed, etc.

The importance of economic, scientific, technological, social and international-legal problems, particularly for the developing nations is beyond doubt. The United Nations and its specialised international agencies serve as a highly representative forum for the cooperation of the overwhelming majority of states and for facilitating positive solution of these problems.

It would be wrong, however, the authors note, to substitute the Organisation's main function, that of maintaining and strengthening international peace and security with these problems, important as they are. As Soviet Ambassadors to the United Nations have repeatedly emphasised, the necessary preconditions for the development of economic, scientific and technological cooperation are created precisely by the success in strengthening peace and international détente. Soviet diplomacy considers it its major task to oppose the tendencies to depoliticise the United Nations. To regard the United Nations and its main bodies primarily as an instrument for solving socio-economic, scientific and technological problems would only harm the Organisation as an important international political mechanism of maintaining and strengthening peace and would divert it from accomplishing its main aims.

The authors show that the positive results of the UN activities could be weightier but for the hindrances caused by the imperialist policies of the Western countries both within the United Nations and outside it.

The materials about the work of the United Nations during the period under review demonstrate that, despite some negative phenomena, the United Nations has remained a useful and viable international organisation, that the international cooperation within its framework has become an integral part of contemporary world relations. As a result of the efforts by the USSR and other countries of the socialist community and with the active support of a number of other peaceloving nations, the United Nations concentrated in the late 1960s and early 1970s on key political issues: on measures to strengthen international security, on disarmament, on the struggle against colonialism and neocolonialism, and on the further implementation of the principles of peaceful coexistence of states with differing social systems.

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Б. И. МАРУШКИН. *Советология: расчёты и просчеты.* М., Политиздат, 1976, 160 стр.

B. I. MARUSHKIN, *Sovietology: Calculations and Miscalculations,* Moscow, Politizdat Publishers, 1976; 160 pp.

This monograph by B. I. Marushkin, D. Sc. (Hist.), contains a comprehensive and critical analysis of contemporary Western Sovietology, of the literature on this subject that has appeared in recent years in the USA, Great Britain, France and the FRG.

Assessing the role of Sovietology in the ideological struggle of today, the author notes that its doctrines and conceptions are of a pronounced anti-Marxist and anti-communist character and designed to protect the capitalist system. Besides, the author insists, Sovietology is also one of the principal suppliers of ideas and arguments for the reactionary anti-Soviet forces abroad who are bent upon nullifying the positive changes in international relations, on turning the world back to the cold war period. And the cold war atmosphere, it might be added, is vital for Sovietology itself, for those of its trends and dogmas which are rapidly losing popularity as a result of détente.

The author singles out two basic trends in current Sovietology: to contrast the Russian historical process to the development of the Western countries, and to regard the history of Russia as a country which passes through the same stages as the advanced countries of the West but with a considerable delay.

The monograph shows how the study of the USSR is organised in the major capitalist countries, exposes the false interpretation by Western Sovietologists of the history of the Great October Socialist Revolution, of socialist industrialisation and the solution of the national question in the USSR, of the relations between

the USSR and the capitalist world, and the untenability of the conceptions of "Soviet totalitarianism" and "convergence" of the two systems. Also shown is the interconnection of these interpretations and conceptions with the ideology and policy of the bourgeoisie's influential groups in the West, and the role played by the Russian counter-revolutionary émigrés in the shaping of Sovietology.

The myth about "Soviet totalitarianism", the author notes, leaves out of account the basic difference in the essence and role of the state under capitalism and under socialism. One cannot fail to see, he continues, the utter untenability of comparing the extreme forms of the dictatorship of the imperialist bourgeoisie which, with the help of repressive measures, keeps the working people in economic and political subordination, and the forms of the socialist state, which for the first time in human history ensures democracy for the broadest masses. Anti-democratic, totalitarian tendencies are, in fact, typical features of the bourgeois political system. Evidence of this are the restriction of civil rights and liberties, the stepped-up activities of extremist, ultra-right organisations which operate with the connivance of the authorities.

As before, the zealots of the "Soviet totalitarianism" theory centre their attacks on the CPSU and the various aspects of its home and foreign policy activities. But at the same time reality compels the ideologues of this "theory" to take into account in their works and to reflect in them to some extent the enormous role which the Communist Party plays in the life of Soviet society, and to make certain corrective changes in the traditional portrayal of the USSR as a force "traditionally hostile to the West". Hence also the change in their approach to the principle of peaceful coexistence of states with different social systems, which is receiving ever broader recognition.

Yu. Yuryev

В. И. КОРЕЦКИЙ. *Формирование крепостного права и первая крестьянская война в России.* М., изд-во «Наука», 1975, 389 стр.

V. I. KORETSKY, *The Shaping of Serfdom and the First Peasant War in Russia,* Moscow, Nauka Publishers, 1975, 389 pp.

The shaping of serfdom in Russia and its consequences have long held the attention of historians, legal experts and publicists, a fact borne out by the torrent of scientific works and publicistic writings.

What strikes one while studying this literature is the large spectrum of views. This is due not only to the different methodological approaches to and methods of study but also to the availability of source material. This material is relatively scanty, most of it having perished during the foreign intervention and the peasant war of the early 17th century and in fires, particularly the 1626 fire in Moscow, in which were devoured most of administrative documents. Territorially, the surviving sources are distributed unevenly; many are only fragments and these are terse. Hence the problem of the reliability of sources, the representative character and authenticity of the documents that are used.

Koretsky's book presents a concrete historical and, at the same time, source study. This combination of the tasks and forms of study is to be observed in the best recent monographs on Russian history of the 11th-17th centuries.

Koretsky conducted extensive research in archives in Moscow, Leningrad and other cities and proved that even in the central archives which have been studied quite exhaustively it is still possible to bring to light valuable little-known or altogether unknown sources on the history of the enserfment of the peasants and the class struggle of the early 17th century.

The author has brought into scientific circulation the unique "Belskaya" Chronicle (State Museum of History), which covers the period from 1598 to 1632 and contains revealing information on the enserfment of the peasants, the first peasant war, the foreign intervention and the people's struggle against it.

Perhaps no other study of these problems has been based on such a wide range of documentary materials. This made it possible to take a new look at various vague or indirect data on the events of the early 17th century.

The purpose of this book, to quote the author, is to show the process of the enserfment that took shape in the first quarter of the 17th century and trace how it was influenced by the peasant war and the intra-class struggle between small and big landowners, between the feudal princes in different parts of Russia. Koretsky concentrates his attention on internal policy, on its class orientation and on showing its mainsprings. He characterises the laws introducing serfdom (their history and content) and also tries to ascertain how they were applied. He closely examines the relatively little studied process of peasant colonisation and enserfment in South and Southwest of Russia.

He did not devote a chapter to historiography, confining himself to a brief review of the major works of Soviet scholars in his preface, and considered in detail various viewpoints in his study of concrete problems.

He deals with the specifics of economic and socio-political development of South and Southwest Russia. As feudalism spread in breadth, serfdom marched quickly to outlying regions. In those areas the government counted on achieving a level of bondage that in Central Russia had been established during decades (if not centuries), mechanically proliferating the serf norms of the centre to the outlying regions (in fact this policy was pursued inconsistently because "freemen" were needed to defend the country's frontiers and build fortresses). All this evoked the active protest of those who fled to these areas from serfdom, and the outlying regions became the main centres in which the peasant war matured. Hence, despite prevailing opinion, the author believes that the decrees of 1601-1602 on the peasant "disavowals" were rather a concession to the discontented peasants than a measure to safeguard the interests of the nobility.

Koretsky closely follows the shifts in government enserfment policy, the stages of that policy, springing particularly from the intricate interrelation of the interests of different social and territorial groups of feudal lords. To a large extent, the contradictions in the feudal class against the background of a growing mass discontent in the countryside and in the towns, that was a real threat to tsarism and the feudal class as a whole determined the fitful enserf-

ment policy of the government in the early 17th century, a policy that counted sometimes on indulging one group of feudal lords to the detriment of others.

The author distinguishes two stages in Boris Godunov's policy in the peasant question. He believes that Godunov, who consolidated his position on the throne, relied on the nobility in the capital and on the élite of the provincial nobility. However, is there any certainty that earlier Godunov had relied on the rank-and-file nobility? The composition of the Sobor (boyars council) of 1598 that elected him to the throne indicates that already then the lower echelon of the military estate did not comprise his mainstay.

We are given interesting observations about the policy of False Dmitri I on the peasant question, a policy that was profoundly adventurist, about the tendency towards a departure from the enserfment policy vis-à-vis bondsmen in the legislation of Vasili Shuisky, and about the manoeuvrings of False Dmitri II. Koretsky shows that the peasant war substantially slowed down the enserfment of the peasants. In the reign of the first Romanov, too, it did not prove to be possible to enforce serfdom entirely, by spreading it equally to the southern regions.

A justified conclusion is that enserfment was much more complex than was formerly believed. Koretsky writes that Ivan IV could not end the peasant "disavowals" with a stroke of the pen and change the destiny of the Russian peasants for centuries to come. The class struggle of the peasants and the bondsmen, and the contradictions in the ruling class itself did not allow the government to enforce serfdom as quickly as it would have liked.

This book contains much material for a study of the peasant war in the early 17th century. The Khlopok uprising is regarded as a dress rehearsal of the Bolotnikov uprising. While noting that the Bolotnikov uprising, which was the culminating point of the peasant war of the early 17th century, greatly undermined the emerging system of serfdom, the author is categorically against the view that this peasant war was an unsuccessful bourgeois revolution.

It seems to me that not all of Koretsky's conclusions are equally well argumented. In some chapters, particularly the fifth and the seventh, he concentrates on debatable issues. Some of his surmises, based on relatively few source materials, are offered much too imperatively. But, generally speaking, this book gives quite a comprehensive idea of the present state of sources and of the extent the problem itself has been studied, and prompts what questions require further exhaustive study.

S. Schmidt

В. Н. НИКИФОРОВ. *Восток и всемирная история*. М., изд-во «Наука», 1975, 350 стр.

V. N. NIKIFOROV, *The East and World History*, Moscow, Nauka Publishers, 1975, 350 pp.

A study of the general laws of world history based on materials related not only to the peoples of the West but also of the East, is particularly important today, and for the following reasons.

To begin with, the rich material on various periods of the history and culture of the countries of Asia and Africa accumulated to date call for theoretical generalisation. Secondly, in the process of scientific cognition a dialectically interconnected phenomenon becomes more sharply delineated: alongside the general laws of human history many specific features of the social development of the East emerge with greater relief.

Furthermore, there is a real danger that the latest heightened interest in the East and its specific features may lead to a kind of "oriental centrism", not to mention the ideological struggle around the Afro-Asian countries and the paths of their development. It pays certain circles in the West to revive the ancient ideas of F. Lorentz or R. Kipling about the "unhistoricity" of the East and its special way of development. The real purpose of these attempts is all too obvious—to impress upon the Afro-Asian peoples that the experience of social progress accumulated by mankind, and especially the experience of world socialism, is not suitable for them. It is not fortuitous that the most violent attacks from different positions are made against the Marxist-Leninist doctrine of socio-economic formations, the determining role of the economic factor and the laws of the class struggle. In an effort to invalidate this doctrine, the enemies of Marxism often turn to the materials of the pre-capitalist history of the Afro-Asian countries, the study of which is made difficult because of the inadequacy or unclarity of sources.

These problems determine the scientific significance of the book by V. Nikiforov, D. Sc. (Hist.), in which the author, widely availing himself of the historico-comparative method (for a comparison facts are taken from the history of Asia, Africa, Europe and pre-Columbian America), examines the socio-economic formations in the countries of Asia and Africa.

Much space in the book is devoted to the author's reflections on slave-owning society in the East. This should be specially noted, since many non-Marxist researchers deny the existence of a slave-owning system in the East where it had its specific features compared with Europe. They also call in question the existence of feudalism in Asia and Africa.

Problems of pre-capitalist social formations, the general and the specific in the development of the non-European countries were discussed by Soviet scholars in the 1920s-1930s and again at the end of the 1950s and early 1960s. During these discussions various hypotheses were advanced explaining the main stages traversed by the Eastern countries in the pre-capitalist period. The book summarises, as it were, much of what was said at these discussions. The first part is devoted to an analysis of the various conceptions aired, the second part is historiographical. In the latter, the author shows that the problem of the social system of the countries of the East was raised by European historians and philosophers as far back as the 17th century but only the founders of Marxism were able to analyse the evolution of the Eastern countries in the context of world history and to pose the question on the periodisation of the history of these countries. The conclusions of the founders of scientific socialism on this question furnish the key to "unlocking" many of the secrets of the Afro-Asian peoples' early history.

In the third part of the book Nikiforov shows, on the example mainly of China, that the facts known to science today confirm the common character of the main stages in the pre-capitalist history of the East and the West. The features

specific of some Asian countries (the castes in India, "the shenshih"—the gentry—in China), do not rule out general laws of development, do not mean that slave-owning and feudalism were unknown to the Eastern countries, which were supposedly replaced by their own specific kind of formation. Just as unfounded is the assertion about the determining role played in the countries of the East by such non-economic factors as the state, religion, etc.

The author's analysis can serve as an example of the fruitfulness of the critical-historiographical method which is used in the first part of the book to generalise the materials of the recent discussion, in the second part to establish the sources of present-day conceptions and in the third part to form from the latest literature an up-to-date picture of the pre-capitalist development of the countries of the East.

Whenever necessary the author has recourse to other research methods. Thus, in the first part of the book from an analysis of scholarly works he passes on to general sociological constructions; in the second, analysing certain passages from the works of Marx and Engels he bases himself on the original sources of the texts; the main sections of the third part are written in the form of an essay on social relations where facts known to science on the social system of different countries are cursorily compared with the picture of traditional Chinese society. The author specially focuses on China and some other states which developed in ancient times in relative isolation: such a survey method helps to graphically demonstrate that in principle the same general laws of development operate in countries that are far apart from each other, that practically have no connection with each other.

The book stresses that it is essential to clearly distinguish the slave-owning form of exploitation from the feudal form. The difficulty lies in the fact that both types of social relations are similar in many respects, especially at their early, undeveloped stages. The author takes issues with those who limit the forms of slave exploitation to the work of the slave directly in the house of the master. He accepts and consistently further develops the thesis advanced by the Soviet historian I. Dyakonov about the absence in the countries of the Ancient East of paramount state property in land, a thesis which cuts the ground from under the theories about the special development of the Asian countries, and about the constant predominance in them of a supposedly single feudal rent tax.

Nikiforov pays special attention to the constant interdependence of the basis and the superstructure, the underestimation of which is, as a rule, the cause of many unclarities. By concentrating wholly on a study of the economic basis, some historians begin confusing outwardly similar but historically different economic phenomena to be found in different formations (helotism and serfdom; hired labour in the ancient world and in the period of modern history, etc.). And although the economic role is, in the last analysis, the determining one, the transition from one formation to another, the final shaping of the new system (this, of course, does not apply to the formation of the primitive communal system) is not possible without the participation of the political superstructure. Other researchers, on the contrary, center attention exclusively on the superstructure and unwittingly begin to ignore the determining role of the economy, reduce everything to a matter of state institutions or ideology.

Nikiforov examines Soviet Indologist V. Pavlov's definition of the leading economic sector and concludes that this definition, worked out on the material of a multisectoral society where the capitalist sector is the leading one, is applicable to other socio-economic formations. This definition emphasises the dynamic character of the leading sector, its decisive influence on the superstructure and on society as a whole, irrespective of the quantitative, sometimes outwardly small proportion of the said sector. Such a situation was, apparently, typical of many societies throughout their ancient history or of the greater part of it; in other words, the specific features of the slave-owning socio-economic formation call for scientific recognition.

A merit of the book is that the theoretical constructions in it are, as a rule, based on voluminous factual material, both historiographical and properly historical. New historiographical features that should be noted are: for the first time world science's appraisal of Eastern society prior to Marx and Engels and immediately after them is traced by the author; the impact of the "discovery" of community on the conception of the interconnection of the history of the East and world history; I. Kireyevsky's role as the first propagandist of the community theory; K. Kautsky's, G. Plekhanov's and A. Bogdanov's erroneous views on traditional Eastern society.

In the historical part of the book deserving of attention is the author's synchronous approach to his study of the main stages in economic, social and ideological history.

The author's broad general theoretical approach to his subject and his mastery of the method of comparative analysis have enabled him to clearly formulate what his colleagues have approached empirically and in certain cases to correct their viewpoint. Thus, Nikiforov expresses well justified views on the social system of the pre-capitalist states of Africa which differ from the conclusions of many Africanists; in the interpretation of the main stages of the history of Iran in connection with world history the author, while he basically accepts the concept of the Soviet historian N. Pigulevskaya, disagrees with her on the question of the chronological boundary between the slave-owning and feudal formations (he dates it presumedly to the times of the Arab conquest).

The problem discussed in the book inevitably concerns not only many countries and many centuries of their history but also many areas that come within the province of the related sciences: philosophy, political economy, the state and law. This circumstance and also the controversial tone of the book will undoubtedly arouse wide discussion around the important questions raised by the author concerning the historical development of the Afro-Asian countries, questions which still await their solution.

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Энергетический кризис в капиталистическом мире. М., изд-во «Мысль», 1975, 478 стр.

Energy Crisis in the Capitalist World, Moscow, Mysl Publishers, 1975, 478 pp.

The book is the first Soviet comprehensive study of the energy crisis. Its authors—a group of scholars from the Institute of the World Economy and International Relations, USSR Academy of Sciences—analyse the crisis in close relation with the present cyclic crisis of the capitalist economy, the chaos in raw-materials supply, and the monetary shocks and assess it as one of the most profound manifestations of the general crisis of capitalism.

The authors debunk the interpretation by many Western economists and politicians of the energy crisis as a phenomenon caused by non-social factors independent of class motivations, and show that it is rooted in the capitalist mode of production and in the policy pursued by the Western powers.

Numerous facts and figures are analysed in the book to prove that the already discovered and exploited deposits of conventional fuels are still very rich and that the potential reserves are practically inexhaustible. Commercial reserves of coal, oil, gas and uranium are 85 times greater than their annual output. The monopolies, however, in their pursuit of superprofits have neglected the objective necessity to exploit the existing power resources evenly and stepped up the use of oil and gas from the most accessible, though most scanty, deposits. The lower increase rates and even reduction of oil reserves in a number of countries of the Middle East, the direct consequence of the monopolies' rapacious sway, were the initial cause of the shortage and growing prices of gas and oil in the early 1970s. The situation was aggravated by the fact that in the West the coal-mining industry which has huge potentials was sacrificed to more profitable industries, and to the oil industry in the first place.

The crisis disproportions within the oil industry mounted as the contradictions between the imperialist powers and the oil-producing developing countries intensified. In 1960s, the latter founded the Organisation of Petroleum Exporting Countries (OPEC) and launched a decisive offensive against "oil neocolonialism". One of the main purposes of the Organisation is to put an end to the very unfair system of payments for oil under which Western monopolies and tax agencies appropriated in the mid-1960s more than 90 per cent of the gross revenue from foreign oil, leaving its owners less than seven per cent. The need to remove this sort of super-exploitation was prompted by the entire logic of the national liberation movement. By 1974, the OPEC countries had managed to raise oil prices approximately five times as compared with 1970s, and thus at least evened their profits with the aggregate incomes of oil concerns and tax agencies of the Western importing countries.

Since the rise in oil prices the energy crisis is characterised more by the relative expensiveness of fuels than by their shortage. Fuel prices have rocketed both on the world market and in the capitalist and developing countries, which gave Western propaganda occasion to speak of the special responsibility of the OPEC countries for the fuel shortage. The book proves convincingly that such talk is groundless:

"The growth of world oil prices would not necessarily have led to higher prices on oil-products, if the interests of the monopolies and the excise 'appetites' of the bourgeois state had been limited."

The fuel industry's lag behind scientific and technological progress is also due to big capital's policy of directing the achievements of science and technology mainly to the manufacturing industries which yield quick superprofits. As a consequence, the fuel industry has found itself left out of the mainstream of scientific and technological progress. The illusion of the "inexhaustibility" of cheap oil in the developing countries, that appeared during the decades of "oil neocolonialism", also made for that. The authors note that in the industrialised countries of the West the "need for relatively large investments in the power industry was ignored and replaced by the more profitable orientation on foreign energy resources. This adversely affected the efforts to ensure an adequate increase of national oil reserves and the development of alternative national energy resources".

The repeated increase of world wholesale fuel prices was a legitimate response to their former extremely low level which impeded the timely and adequate inflow of capital into the power industry. The authors cite facts and figures to show that the prospecting for and working of oil and gas in difficult geographical and geological conditions, the production of liquid and gasiform fuel from solid minerals, a broader use of coal with due consideration of the rules of environmental protection and the development of new sources of energy are becoming non-deficient only now that prices have been raised considerably.

In the West the opinion is often expressed that the changes in the prices for fuel and some raw materials are short-term and that there can be a return to the former price level. The authors of the book disagree with that: "We feel that only the very highest points of the new prices for raw materials could be regarded as being the 'short-term' part. The very tendency for raw materials to become more costly is irreversible." And the events since the publication of the book fully bear out this conclusion.

The authors also analyse the numerous Western projects and programmes designed to help overcome the energy difficulties. They do not deny that some of the projects are quite feasible but point to their contradictory and inconsistent nature. The power industries need huge fixed capital, resources and investments and, therefore, demand more than any other industries a well-balanced public organisation. Capitalism, however, is incapable of creating such an organisation. Big capital continues strongly to protect the privileges it has appropriated and to dispose of the resources of society as it sees fit, while the bourgeois state is actually guided by the interests of the monopolies.

No less contradictory are the approaches to an international solution of the energy problem. The desire of the Western powers to establish mutually acceptable relations with the OPEC countries, as the book shows, goes hand in hand with a policy of threats and pressure on those countries and their allies. At the same time the West is doing its best to tie many of the OPEC countries to the world capitalist system. A new form of neocolonialism is being devised to enable the transnational corporations to rely in their

expansion on the "oil money" of the OPEC countries.

The authors believe capitalist rivalry to be one of the main causes of the fuel crisis. And indeed, the decline of the coal-mining industry in the West is a direct result of the long competition between the coal and oil companies, between automobile transport and the railroads, between private and public transport, a competition that is most adversely affecting the mass of the people.

One of the merits of the book is its analysis of the inter-imperialist and social contradictions of the capitalist world, either caused or aggravated by the energy crisis. It is the first work on this topic to reveal the leading role of the Communist and Workers' parties in mobilising the working people and all progressive forces in the West to the struggle for a solution of the fuel problem on a really democratic, anti-imperialist basis.

B. Rachkov

Движение неприсоединения в документах и материалах. М., изд-во «Наука«, 1975, 263 стр.

The Non-Alignment Movement in Documents, Moscow, Nauka Publishers, 1975, 263 pp.

The non-alignment movement, which arose after the Second World War, has in recent years become an important factor in world politics and today covers the very intricate, and at times contradictory, complex of most of the newly independent countries' foreign-policy measures. The interest shown by the broad public in this movement is only natural therefore. Needless to say, the approach of various political circles to the non-alignment policy and their estimate of this policy are by no means similar. John Foster Dulles, who voiced the aggressive aspirations of imperialism, qualified the policy of non-alignment as an amoral one. The imperialist powers and reactionary forces associated with them have opposed the non-alignment movement from the very outset and tried to vitiate its anti-imperialist trend, to steer it into channels of passive neutrality.

The Soviet Union and other states of the socialist community have always noted the positive role of the non-aligned countries in strengthening peace and international cooperation, have always supported the anti-imperialist orientation of their policy and the struggle of their people against colonialism and racism, and for independence and social progress.

The collection under review contains the resolutions, declarations and other documents passed by the four conferences of the heads of state and government of the non-aligned countries, the consultative meetings of special representatives and by the foreign ministers' conferences which prepared the summit conferences.

The materials conclusively show that the preservation and consolidation of peace on earth have been proclaimed by the non-alignment movement as one of its central tasks. Already the Belgrade Declaration, adopted in 1961 by the First Conference of non-aligned countries, underscored that no state and no government can today shun responsibility for world peace. The Conference participants emphatically declared that a lasting peace could be ensured only if colonialism, imperialism and

neocolonialism in all their manifestations would be completely eliminated, and that the principles of peaceful coexistence were the only alternative to the cold war and a possible nuclear catastrophe.

Stressing that peace and stability in the world depend to a considerable degree on the relations between the Great Powers the non-aligned countries welcomed the relaxation of tension between the USSR and the USA.

The Conference did not confine itself to enunciating fundamental political positions. It also advanced a number of concrete proposals, came out in favour of general and complete disarmament under strict international control and recommended the convocation of a world disarmament conference as one of the measures of achieving this goal.

The Conference's appeal to all peaceloving countries, in particular to UN member countries, that they must without delay help the people of Angola build a free and independent state, or the statement that the conference participants condemn the imperialist policy pursued in the Middle East and call for the restoration of all the rights for the Arab population of Palestine, are as timely today as then.

This position and these demands of the movement, expounded at its first summit conference, were repeatedly confirmed and further spelt out by subsequent meetings in their decisions the texts of which are contained in the collection.

The meetings of the non-aligned countries in recent years have been centring attention on problems related to international détente. Thus the Fourth Conference noted that the success achieved in the relaxation of tension between East and West as well as in Europe in the settlement of the problems inherited from the Second World War is a significant victory for the peace forces throughout the world.

The non-aligned states support the call of the socialist countries to extend the process of détente to other regions of the world, to take concrete steps to deepen it and complement political détente with military détente, to complete decolonisation.

The collection opens with an article by R. Tuzmukhamedov in which he generalises some questions of the theory and practice of the movement. He writes: "Anti-imperialism, anti-colonialism, anti-neocolonialism and peaceful coexistence are the key slogans of the non-alignment movement ever since its inception. The struggle for their realisation constitutes the socio-historical progressive significance of non-alignment."

Of course, the non-aligned countries by no means represent a homogeneous group socially and economically. It includes the most diverse states, ranging from socialist countries to feudal monarchies. This explains the different degrees of consistency in implementing the progressive principles on which the policy of non-alignment is based.

The documents in the collection confirm the truth of the statement in the Report of the CC CPSU to the 25th Party Congress: "We and the vast majority of the states that arose on the ruins of the colonial system are united by a deep common allegiance to peace and freedom, and aversion to all forms of aggression and domination, and to exploitation of one country by another. This community of basic aspirations is rich and fertile soil on which friendship will continue to flourish."

The Fifth Conference of the heads of state and government of the

non-aligned countries, held in Colombo in August 1976, was a further step towards confirming the progressive principles of non-alignment and the principles of peaceful coexistence in relations between states with different social systems.

The collection helps the reader to get a more complete idea of the essence of the non-alignment movement, this new factor in contemporary international relations. Therein lies its value.

V. Sofinsky

И. Р. ГРИГОРЬЕВ. *Уильям З. Фостер*. М., изд-во «Молодая гвардия», 1975, 208 стр.

I. R. GRIGORYEV, *William Z. Foster*, Moscow, Molodaya Gvardiya Publishers, 1975, 208 pp.

Among the outstanding figures of the world Communist movement a special place belongs to William Z. Foster, one of the founders and leaders of the Communist Party of the USA. An active participant in the trade-union battles of the American working class who witnessed the burgeoning of capitalism in the second half of the 19th century and its profound crisis in 1929. William Foster in his speeches and writings showed what was behind the American "miracle" based on exploitation of the working people. The victory of the Great October Socialist Revolution in Russia gave new impetus to his activities. Foster met with V. I. Lenin, participated in the work of the Comintern, organised resistance to fascism and the cold war in his country. All these aspects in the life of the American revolutionary and scholar are widely covered in the book by I. Grigoryev. Drawing extensively on documents, periodicals and monographs, the author shows both the militant path traversed by this American Communist and the various stages in the US history over the past 100 years.

Already at the age of 10 young William, the son of Irish immigrants, had to leave school and go in search of odd jobs. At the age of 14 he received his first lessons in the class struggle when he participated in demonstrations and meetings of the tram workers of Philadelphia. In the years that followed young William did a great deal of reading which introduced him to a materialist world outlook and socialist convictions. These were to have a tremendous impact on all his subsequent activity.

In the early part of the 1900s Foster joined the Socialist Party and became an activist of the Industrial Workers of the World organisation (IWW). He called for strike action as an important means of fighting capitalism. In an article published in 1935 Foster showed the roots and specific features of American syndicalism which manifested themselves in more favourable labour conditions compared with Europe, the emergence of a numerous labour aristocracy and the transition of part of the working class to the ranks of the middle strata and even to the class of the bourgeoisie during periods of rapid industrial development.

In his writings Foster analysed a number of other circumstances that devitalised the revolutionary fervour of the workers: the existence of a broad stratum of immigrants and migrant workers who in a number of cases were apolitical; the religious and language heterogeneity of the proletariat which made it difficult to achieve class solidarity; the venality of American bourgeois politicians which aroused in many workers an aversion to politics in general; the ultrareactionary regime prevailing in the AFL which alienated revolutionary-minded workers; the reformist orientation of the Socialist Party which gave rise to discontent among the Left and drove them to positions of syndicalism, as happened with Foster himself.

The author then shows the tremendous impact the October Revolution of 1917 had on the American working class. Foster was one of the founders of the Communist Party of the USA. The works of Lenin helped him, as well as many other American Communists, to understand the intricate problems of the labour movement. In the spring of 1921 Foster attended the First Congress of the Profintern (The Red International of Labour Unions) in Moscow; as a member of the American Communist Party delegation he participated in the work of the Third Congress of the Comintern (June-July, 1921) and was one of those who met with Lenin.

On his return to the United States Foster told the US workers about his trip, wrote articles, pamphlets and books in defence of Soviet Russia and the October Revolution. When the authorities staged the farce of a trial of Foster, Ruthenberg and other leaders of the Communist Party, calling them "agents of Moscow", Foster used this trial, to the chagrin of its organisers, to spread Marxist-Leninist ideas and to expose the actions of the government which wanted to scare the man in the street with the bogey of a Bolshevik revolution in the United States.

The economic crisis of 1929 led to the intensification of the class struggle in the country. The demonstrations of hundreds of thousands were brutally suppressed by the government. Among the first to be arrested by the police were Foster and his comrades. After his release Foster, although in very poor health, again threw himself into the political life of the country. In 1933 Foster was for the third time the Communist Presidential nominee.

The author gives a detailed picture of the struggle waged by Foster during the Second World War in support of opening a second front, of increasing aid to the Soviet Union. The American Communists played a significant role in mobilising public opinion against the influential ultra-Right elements who favoured a compact with Hitler.

With the "outbreak" of the cold war the Communists and other progressives in the USA who entertained friendly feelings for the Soviet Union began to be systematically persecuted. The first to fall victim of the witch-hunt were the leaders of the Communist Party. Foster, then 67, was seriously ill and unable to attend the trial. He sent the court a written document in which he exposed the far-fetchedness of the accusation which represented the American Communists as "foreign agents". Bed-ridden, he wrote several books on the history of the Communist and working-class movement in which he traces, from Marxist-Leninist positions, the evolution of American society and the struggle of the workers for their rights, advocated friendship and cooperation between the USA and the USSR.

At the beginning of 1961 Foster, 80, came to the Soviet Union for the last time. The closing pages of the book are written with particularly deep emotion: the author was one of the last Soviet people who spoke with this fine son of the American people shortly before his death.

V. Kurochkin

А. БЕЛЯЕВ. *Идеологическая борьба и литература. Критический анализ американской советологии.* М., изд-во «Советский писатель», 1975, 374 стр.

A. BELYAEV, *The Ideological Struggle and Literature. A Critical Analysis of US Sovietology*, Moscow, Sovietski Pisatel Publishers, 1975, 374 pp.

For many years A. Belyaev's literary activities have been aimed at exposing fabrications about our country and her literature emanating from US Sovietologists G. Struvé, V. Aleksandrova, G. Yermolayev, G. Billington and the like. One has only to look at the lengthy bibliography to see that the author has a first-hand knowledge of his material. We have before us his latest book—a piece of profound research, in which full information goes hand in hand with historico-literary analysis and theoretical conclusions.

The author could have chosen between two structural patterns: a kind of "historical record" of Sovietology itself, or he could have taken Soviet literature—the object of the Sovietologists' attacks—as the core of his composition, and trace its development chronologically. Both patterns have certain advantages.

A study of the "history" of Sovietology will help uncover its class essence, since such an approach will reveal the link between the immediate needs of the policies of some Western powers and the Sovietologists' scientific theories. Moreover, Sovietology taken, as it were, in its inner development, would be better understood from the viewpoint of its present crisis, which has been the outcome of détente throughout the world.

As for the study of Soviet literature which has been so utterly distorted by the Sovietologists—that approach has permitted the author to concentrate on the very crux of the problems the struggle is all about. Since Soviet literature is, of course, infinitely more important than any history of its distortion, A. Belyaev has given preference to the second structural approach in his book, while keeping the first in his field of vision.

The book consists of an "Itroduction to the Subject", and five main chapters: "Where Does the Volga Flow From?" "The Truth of History and the Falsehood of the Sovietologists", "For Whom Did the Bell Toll?" "The Sovietologists' Paper Attacks on the War Theme in Soviet Literature and the Cold War", and "New Times—New Tactics". Each chapter consists of a larger or smaller number of sections.

The Introduction sets forth the history of Sovietology's inception, formation and evolution, all limited to the prewar years. The concluding chapter, on the contrary, deals with its latest period (from the mid-1950s), when a reappraisal of values is taking place in the West now that the tremendous achievements of the socialist world have become obvious. Yet Sovietology remains true to itself: it merely modifies its tactics: against the background of intensified cultural exchanges, the Sovietologists are trying to deceive Soviet intellectuals and split their ranks by pretending to feel deep concern for their fate. A. Belyaev shows the utter failure of all such attempts. The chapter in question, and the book itself, end by showing the impasse Sovietology has found itself in. Finally, the second section of Chapter IV, entitled "The Cold War Is Good Business", describes the golden age

of Sovietology—the years of McCarthyism.

At the same time, each chapter in the book has been arranged with the subject-matter of Sovietological writings in mind. The author exposes the myths about Russian literature of the beginning of this century, Soviet literature of the 1920s and 1930s, the period of industrialisation, literature during the Second World War, and in the last two decades. Belyaev is consistent in unmasking Sovietological concoctions about the art of the period of developed socialism.

In one way or another, the monograph deals with almost all the major aspects of the subject: the sources of Soviet literature; the intellectuals' attitude to the revolution; the Party's Leninist policy towards literature; the role of Soviet art and literature of the 1920s in the overall cultural situation, and the essence of the method of socialist realism.

The book under review is the first attempt at a comprehensive approach to and appraisal of the Sovietologists' ideological equipment. This has engendered a new quality: the book exposes not only a certain hostile thesis but a reactionary trend as a whole. The author has unmasked bourgeois ideology, of which Sovietology is a specific yet integral part.

To the imperialists' lies the author has contrasted the truth about socialism, on the basis of historical and literary facts, the testimony of writers and Party documents, appraisals by our friends abroad, and even the reluctant admissions of our ill-wishers.

The Ideological Struggle and Literature is a timely work, very much to the point, scientific and publicist in tenor and true to Party principles.

D. Zatonsky

Ю. С. СТЕПАНОВ. *Методы и принципы современной лингвистики.* М., изд-во «Наука», 1975, 311 стр.

Yu. S. STEPANOV, *Methods and Principles in Present-Day Linguistics*, Moscow, Nauka Publishers, 1975, 311 pp.

The book is fundamentally metalinguistic, its object of study being the aims and methods of present-day linguistics. In what would seem the extraordinary variety of trends and directions in this field, the author has discerned, and helps the reader to see, a certain unity in the trends of development. At the same time, this book is linguistic proper, because it is illustrated with specific solutions proposed by the author. The research is not into some particular area of linguistics, but into the object and methods of linguistics as a whole, Stepanov's observations referring accordingly to various levels and planes of language. Nevertheless, both in the overall treatment and in the special illustrative sections, a definite unity is observed, and the impression is created that everything the writer has to say bears upon a single problem.

The introduction, which is entitled "General Questions of the Theory of Method in Linguistics", postulates the division of the basic methods in present-day linguistics into the historical and the logical, the features of both being defined. In essence, these are not methods pure and simple, in the measure in which these are possible in general; here a certain bringing together of aims and methods has been effected.

In the section "Lines of Search and Development in Present-Day Linguistics", Yu. Stepanov has shown that the new tasks that arise at a certain stage in the development of science engender new methods, since the old ones are not designed to cope with such tasks. The author has introduced a new concept, that of the "supra-categorisation" of grammar, on a semantic basis, with the aid of which he attempts to study deep-lying phenomena, general processes and states. Today this trend, among whose initiators Baudouin de Courtenay has with full justice been named, has led up to the present-day theory of universals, which, as we all know, is characteristic of all developing sciences. The new element here is that, as we see it, the author has been the first to link the principle of "supra-categorisation" in grammar with the principle of a "structural hierarchy" in language, and has shown that the latter inevitably merges with the former. Yu. Stepanov has followed up his concept of grammatical "supra-categorisation" with that of lexicological "supra-categorisation", which provides an explanation for the recent rapid development of the lexicology of word-combinations, phraseology. It is to be regretted that he has said nothing about "supra-categorisation" in syntax.

The section "The Historical Principle in Present-Day Linguistics" deals with various reconstructions with the aid of logical modelling. In linguistics, models show how the synchronous description of a certain state of a language makes it possible to go over to reconstruction. In the author's opinion, a synchronous description which reveals a language's system is the first stage in historical reconstruction.

Important in this book is the proposition on the unity of the spatial (linguo-geographical) and the temporal approach to a consideration of the order of linguistic processes. The successes scored in the most recent linguo-geography confirm this idea of the author's. Of particular importance is the conception of linguo-geographical complementary distribution, which stems from the principle of a consideration of all language phenomena in a single spatial and temporal continuum.

A major place in the section "A Generalisation" belongs to paragraphs that illustrate fundamental propositions of theory. In fact, these are pieces of individual research into phonology, semantics and reconstruction, each of which presents interest in its own right.

The entire monograph is imbued with the spirit of "semantic grammar", with emphasis on the semantic basis of categories which may have formal expression in some languages. This approach permits a profound reconstruction, with the use of the typological criterion.

In the last section "The Logical Principle" Yu. Stepanov describes the main logical methods in present-day linguistics and the possibilities and modes of their combination.

The conclusion "Postulates Actually Operative in Present-Day Linguistics", deals with present-day and often highly radical modifications of the four fundamental propositions in the linguistic conception of de Saussure, more or less obviously presented by the Swiss linguist in the form of postulates.

Rich in content and original in form the book under review will undoubtedly evoke considerable interest.

V. Martynov

В. АДМОНИ. *Поэтика и действительность. Из наблюдений над зарубежной литературой XX века*. Ленинград, изд-во «Советский писатель», 1975, 310 стр.

Д. ЗАТОНСКИЙ. *Зеркала искусства. Статьи о современной зарубежной литературе*. М., изд-во «Советский писатель», 1975, 343 стр.

V. ADMONI, *Poetics and Reality. Observations on Twentieth-Century Literature Abroad*, Leningrad, Soviet Writer Publishers, 1975, 310 pp.

D. ZATONSKY, *The Mirrors of Art. Articles on Present-day Literature Abroad*, Moscow, Soviet Writer Publishers, 1975, 343 pp.

An ever greater number of works have appeared of late, whose authors try to ascertain the overall concept contained in the formula "20th-century art". Some see something inevitable in the advance of literary forms; others discern in present-day literature a game of verbal structures.

A discussion has got under way, whose participants stand close to one another in their appraisals of the specific features in 20th-century art, but differ in their methodological approach to creativity in art. Such divergences are to be seen in two books *Poetics and Reality* by V. Admoni and *The Mirrors of Art* by D. Zatonsky.

Perhaps there are no grounds for comparing the two books, it may be asked. Admoni begins with the 1880s; Zatonsky is interested in the second half of the 20th century; Admoni's book is logical in structure; Zatonsky's book is a collection of essays published at different times. The first author's style is rigorously academic; the other prefers the free publicist manner.

Both authors deal with Western literature of the 20th century, and both confine themselves to almost the same names: J. Joyce, M. Proust, R. Musil, F. Kafka, A. Camus, A. Robbe-Grillet, and, on the other hand, B. Brecht, E. Hemingway, Th. Mann and so on. Yet the two scholars differ in their approach to these writers and to literature in general. The sociological principle is very clearly expressed in Zatonsky's book, while that of Admoni is a close study of the aesthetically specific in art phenomena.

It does not follow hence that the author of *The Mirrors* regards art merely as a projection of certain social conflicts: there unfolds before the reader a world of art and creativity. In just the same way, Admoni's primary attention to aesthetic features does not mean he extracts literature from a social situation. On the contrary, the author has chosen a most rewarding method: he looks for signs of the times not merely in the problems a work of literature deals with but also in the sounds of its words, the compositional structure, and the development of the plot, in the style.

Many of V. Admoni's observations are both interesting and true. For example, in his analysis of Th. Eliot's *Marina*, the critic attempts to show that, in its very structure, free verse reflects a sense of the fragmentation of the world, which overcame many Western intellectuals who had lived through the First World War. More examples can be cited to illustrate the point.

And yet, one's progress through Admoni's book gradually produces a sense that something is lacking—most likely, the atmosphere of the period. This drawback affects

not only history but art as well: without links with the realities, it begins to resemble a proving ground for various poetical structures. As a result, two types of literature are contrasted—one which, to quote the author, uses images of people on an ordinary and earthly scale and forms, and the other that radically upsets the proportion between various aspects of reality. The contraposition of this kind seems to be insufficient: in that case, such fundamentally divergent writers as Hemingway, Thomas Mann, Brecht, on the one hand, and Robbe-Grillet and Handke, the West German avant-garde playwright, on the other hand, are seen within one and the same literary trend.

Of course, the creators of the "new novel" reproduce the world of things with minute precision, but there is no room for man in that world—he has been ejected from it. In the same way, life has departed from Handke's theatre. Clockwork movements, automatic gestures and the simplest syntactical forms replace the rich and flexible language of people—all these are called upon to convey the hollowness of present-day civilisation, in which man has, by the author's grace, disappeared.

Aware of these features in present-day modernism, Admoni presents the works of its various representatives as codes, games with grammatical formations, or some kind of word engineering. Given some mental effort or guidance from the "innovators" themselves, it may be possible to decipher the meaning of a poem or novel, and to discover in the latter an "urge towards the amorphous" in plot-construction or, on the contrary, towards "new-style plots" (according to Admoni, this is a feature of Handke's plays). But will that tell us anything about the neo-avant-garde as a definite cultural phenomenon? As I see it, a realisation of that can be gained only in the social context, of present-day bourgeois society.

It is to be regretted that, despite his highly detailed analysis of avant-garde art, Admoni has in considerable measure bypassed the cultural and historical significance of this phenomenon.

The individual and history, the lines of life development, man's inner world—these would seem to be the crucial issues of the similarities and dissimilarities. Here we can come up against Faulkner's zigzag forms and Greene's consistent narrative. Or writers with similar technique, say, Brecht and Becket—both inclined to rigidly rationalist structures—may prove highly divergent.

It has often been said that 20th-century art has shown far greater interest in the individual's inner life than did the classical realism of the past century. Art's analytical technique has changed too.

Twentieth-century literature has drawn extensively on James Joyce's virtuoso flow-of consciousness technique. Used by its inventor, that technique could become a means of penetrating deep into the individual's inner life, yet sometimes it was simply a self-sufficient device. In a word, analysis of form is justified only when it helps reveal the content within it.

This seems to be the approach D. Zatonsky has chosen in his study of art. His article "On Outward Similarity and Difference in Principle" analyses works by the same writers as V. Admoni does, i.e., Robbe-Grillet, Brecht, Hemingway, Becket, Camus and Thomas Mann, but the outcome of his study is different. While Admoni regards

Camus's surface depiction and Hemingway's "iceberg" principle as merely two different forms of literature within the world of human dimensions, Zatonsky reveals the major difference in principle between the two art systems—the realist and the modernist. He compares extracts from *The Outsider* and *A Farewell to Arms*. The similarity is obvious: terseness of expression and a slightly ironic style. However, Camus's character does not go farther than words, beyond which is nothingness, while the inner monologues of Hemingway's character conceal deep emotions of a person who suffers but tries to conceal his suffering behind a wall of reserve.

These are merely examples, though they point to the core of the methodology, for Zatonsky considers plays by Frisch and Dürrenmatt in immediate contiguity with the social trends of the times, and their social, political and philosophical movements.

It may be cause for surprise that what might be seen as a European backwater—a country whose policy has been traditionally far removed from war and conflict—has produced artists of world stature. As Zatonsky sees it, there can be no neutrality today—in the sense of indifference to the fate of the world, though the number of neutral states is growing.

It is from an irreversibly changed reality that Frisch and his younger contemporary take the subjects of their plays. Reality is reflected in a highly complex manner in the artistic structure of their plays, with their grotesque situations and depersonalised characters, who dash between faith and scepticism, things that Zatonsky has dealt with so interestingly.

As mentioned above, the book is a collection of articles—the author does not lay claim to a complete picture of the evolution of art in the 20th century (that attempt was made in some of his earlier works, particularly in his book *The Art of the Novel and the 20th Century*). Yet a certain unity runs through the collection—an examination of today's major ideological and aesthetical problems. The first among them is Art's attitude to Man (the article "On Outward Similarity and Difference in Principle"; the essays "Disputes Over Realism and Bertolt Brecht" and "Has Western Art Renounced the Classics?"). Then he touches upon the artistic innovativeness of the art of socialist realism (the opening article) and expresses some ideas on novels by East German writers ("The Art of Becoming a Man"). Last but not least is mass culture as an integral part of advanced capitalism.

Modernism today claims to be the only trend capable of expressing the essence of the times, and rigidly contrasts itself to realistic art—very much in the same way it did half a century ago. But the main clash is on a different plane. Sincere as the followers of the "new" art may be, their rebellion is only external, while the extremes—the avant-garde and mass culture, against which the new avant-garde has risen—have merged tragically to spell the death of innovativeness. The antinomy boils down to the following: mass culture versus humanist and democratic culture; the levelling down of man to some average dimension and a set of schematic primitive social patterns versus an in-depth study of life and the individual; a belittlement of art versus an awareness of its lofty mission.

That antinomy is obvious in

Zatonsky's book, especially in the article on the argument over whether Dusseldorf University should be named after Heinrich Heine ("The Poet and His Native Town"), in which the author poses the dramatic question whether the artist is needed by bourgeois society.

Articles written at different times, with each presenting independent interest reveal a common link when brought together in a single volume: disparate extracts blend to present a picture of actual struggle between the art conceptions of life and man.

It is in conditions of that struggle that the complex and zigzag advance of art proceeds. One can discern the real significance of the changes in art more clearly when artistic quests are seen against the historical backdrop of the recent past.

N. Anastasyev

Е. В. ЗАВАДСКАЯ. *Эстетические проблемы живописи старого Китая*. М., изд-во «Искусство», 1975, 439 стр.

E. V. ZAVADSKAYA, *Aesthetic Problems of Ancient Chinese Painting*, Moscow, Iskusstvo Publishers, 1975, 439 pp.

This is practically the first book in Soviet Sinology to offer a generalised study of the history of Chinese aesthetic thought, of the history and theory of ancient Chinese classical painting. The first part is a detailed examination of the main phases in the development of the theory of Chinese painting, beginning with the first steps of its aesthetic comprehension. The author notes the role played by ancient and mediaeval philosophy (from Confucius, Lao Tsu and Chuang Tsu to Chu Hsi and Wang Yang-ming) and by its fundamental concepts and categories in forming the foundations of Chinese aesthetics. The aesthetics of painting as an independent sphere of knowledge took shape approximately in the 3rd-6th centuries. The author analyses the treatises of Ku Kai-chih and Sieh Ho, Wang Wei and Liu Sieh, writes of the huge role played in the history of Chinese aesthetics, as in philosophical thought generally, by Chan-Buddhism, which appeared in mediaeval China as a result of a creative revision of Indo-Buddhist teachings.

The author brings many written monuments of the theory of art into scientific circulation, describes their sources and philosophy and draws attention to the historico-cultural environment that gave rise to the principal ideas, concepts and categories of aesthetic thought. Touching upon the unique character of each stage in the history of the theory of painting in China, the author shows how with the passage of time the problem of comprehending the correlation between the illusory and authentic in art, the central problem in the Han epoch (3rd century B.C. to 3rd century A.D.), was superseded by more profound and serious contemplation, for instance, in connection with the nature of artistic creativity that attracted art theoreticians in the Tan epoch (7th-10th centuries A.D.). The particular ideas and categories of aesthetic thought are analysed in the second, most significant part of this study.

Zavadskaya acquaints the reader with many of the questions that were broadly discussed in treatises on art theory and in philosophical compositions. Considerable attention is devoted to the philosophical character of classical Chinese painting, with the author skilfully showing the aesthetic significance of the philosophical categories of *tao* and *wu-wei* (taking no unnatural action) and the dualism of *yang-yin*. Note is made of the importance of portrayals, as signs and symbols in Chinese philosophy and culture, of the inner harmony of painting and poetry in the verse and scrolls of great masters, e.g., Wang Wei.

Some of the chapters are more specialised studies in the sphere of art, but even in them the theory of portrait or flower painting are unfolded in a broad philosophical context, in connection with analyses of the Confucian or Taoistic Buddhist conceptions of the individual. The chapter on the morphology of painting is an attempt to analyse Chinese painting from the semiotic standpoint and examine the Chinese classical aesthetic approach to the scroll as a text with its own morphology, and to characters as models of portrayal.

In the chapter on painting as a sociological phenomenon, the author justifiably draws attention to the fact that in traditional China the artist usually regarded himself as an instrument of the higher Absolute, of Nature, of Buddha. Hence the worship of the canonical norm, each point of which was regarded as containing profound meaning, ritual symbolics and an inviolable sign of eternity and universality. The artist expressed not a subjective vision of the world but a set truth. Under these conditions individual genius could find expression solely in subtle improvisation, and this is what was valued by experts.

In analysing the aesthetic element of classical Chinese painting, Zavadskaya skilfully links it up with analogous elements in other cultures, notably European civilisation. In the general aesthetic context the author compares Chinese and Western aesthetic traditions and discusses the influence of Oriental aesthetics, for instance, Ch'an (Zen) Buddhism, on painters like Van Gogh and Matisse.

The third section of the book is an anthology of major aesthetic texts presented mainly in the author's translation and for the most part published in the Russian language for the first time. In addition to being instructive in the technique of painting these texts contain profound thoughts about the role of the artist's intuition and inspiration; of the mainsprings and impulses of his creative vision linked with Nature, the Absolute, Buddha, the Great Void and other mystical and metaphysical categories. Among these texts special mention must be made of two that are given in their entirety or almost in their entirety. They are "A Collection of Pronouncements on Painting" by the monk Shih Tao (1630-1717), which gives and aesthetically interprets almost the entire tradition of Chinese classical painting, and the "Book of Precepts of the Sixth Patriarch". The latter treatise is a canonical text, forming the quintessence of Chinese Chan-Buddhism, which played a large role in the history of Chinese (and Japanese) thought. The appearance of this treatise in the Russian language is itself an outstanding event ranging beyond the history of Chinese aesthetics and meriting special mention.

The book contains many revealing observations, original conclusions, generalisations and serious judgements on Chinese painting and aesthetics and on general aesthetic, philosophical and cultural problems.

L. Vasilyev

Н. И. РОДНЫЙ. *Очерки по истории и методологии естествознания*. М., изд-во «Наука», 1975, 423 стр.

N. I. RODNY, *Essays on the History and Methodology of Natural Science*, Moscow, Nauka Publishers, 1975, 423 pp.

This is a posthumous publication, and the material it contains is a happy combination of articles and reports, written and published at various times (some of them for the first time in this collection) and dealing with a broad range of problems in the methodology and history of natural science. It lends itself well to classification along a number of main lines which are held together by a single theoretico-cognitive epistemological approach based on the philosophy of dialectical materialism.

The first two articles in Section I, *From the History of Chemistry*, deal with the development of chemical kinetics and the emergence of the theory of chain reactions. The kinetics of chemical reactions—one of the central problems of physical chemistry—have become very important in the recent period in the tackling of technological problems in the chemical and petrochemical industries. That is why a qualified and detailed analysis of the problem, including the theory of chain reactions, in its development and present state is undoubtedly of great interest for science and technology.

The other two articles in this section, "The Struggle of Competing Theories in the History of Chemistry" and "The Problems of Science and Its Development by the Chemists of the 19th Century", do not deal with particular problems in the history of chemistry, but with the general problems in the history and methodology of natural science as a whole, with examples being taken from the history of chemistry by way of illustration. Here the author considers the relationship between theory and experimental research, between hypothesis and theory, and gives a classification of theories depending on their scope. He gives a detailed analysis of the role of logic in the development of science. He subjects to profound and well-reasoned analysis the problem of continuity and struggle of theories in science, illustrating this with examples from the history of chemistry. He says that a situation in which one of the competing theories rules supreme would be tantamount to a halt of all progress. It is the struggle between competing theories that provides an important stimulus and leads to leaps in the development of science. No new theory which broadly covers all the experimental data known to science discards the more particular theories which came before it and which had to rely on relatively limited data, but includes these within itself in a transcended form, and assimilates them. The well-known Russian scientist, A. Butlerov, used to emphasise, the author says, that structural theory would be included in a modified form within a broader range of conceptions and, to some extent, share the lot of its predecessors. Referring to the views of many outstanding chemists, the author remarks on the leading role in science of theory and experimental data, its fundamental basis. The author gives a well-reasoned illustration of his own view of the problem of historical continuity in theory and science, and of the relationship between the old and the new, by taking examples from the history of chemistry, physics and

sometimes, mathematics and biology. One generation of scientists passes on to the next generation the baton of accumulated knowledge reflecting the definite level of science achieved at the given historical period and providing a starting point for the new generation.

Due to a happy selection of material in Section II, *General Regularities in the Development of Science and the Problems Arising from Their Study*, this part of the *Essays* leaves the impression of being a monograph, although, in actual fact, the articles making up the section are not parts of a single monograph at all, but, as it was said earlier, were written and published independently, at various periods. Here the author consistently, adequately and with sufficient comprehensiveness considers the basic components of science, their relationship and mutual influence, the motive forces in the development of the natural sciences, the role of the subjective and the objective factors in their development, and the struggle between various theories and scientific trends.

The author gives a detailed analysis of the relationship in the development of the natural sciences between the regularities intrinsic to the science, on the one hand, and of external factors, on the other, and this analysis is illustrated with examples from the history of physics and chemistry. The author believes that the crucial factor in the development of science is its logic, the development of its inner regularities. The fact that major scientific discoveries are made by scientists in different countries at short intervals from each other, which means almost collectively, is explained by the fundamental fact that the inner regularities which are intrinsic to the given science determine the logic of its historical development, regardless of the country in which it is developed.

Among the other factors and regularities underlying the development of the natural sciences which the author deals with specifically are scientific revolutions and the forms in which these are expressed in the individual sciences and in natural science as a whole. Every scientific revolution, he says, is preceded by a stage of evolutionary development in the science. The basic component of such a revolution is the succession of theories, the development of a new conception. Scientific revolutions are exceptionally rare, and are as a rule preceded by major discoveries and the resultant crisis state of the science. Such a situation of crisis is, in effect, the crisis of the old system of conceptions, the old way of thinking.

The author also deals with matters like the efficiency of science, the regularities governing the growth of its volume, the structure of scientific establishments and the influence of the scientific personality on the trend in the development and pace of progress in science. Considering the generation of knowledge as the basic function of science, the author assesses the role of various outstanding scientists—physicists and chemists—in the generation of ideas and in the organisation of research, especially in this century. In its development, science, with its ups and downs, overcoming obstacles, and undergoing metamorphoses, extending the sphere of its operation and enhancing the power of its technical instruments and prognostic action, has become a highly active factor in production and a part of the productive forces.

In Section III of the *Essays*, entitled *The Scientist and His Activi-*

ty, the author deals with the subjective factor in science, with the creators of science, the individual scientists and the scientific collective, their creative potential, the extent to which this potential is used, and the structure of scientific collectives. The author brings together many of the views expressed by outstanding natural scientists on questions like the role of the scientist as a generator of ideas and as an executive, the dependence of the scientist's creative capabilities on his age, the intuition of the scientist and its influence on the development of science, the moral qualities of the scientist, and the types of scientists.

Characterising the style of work in some scientific schools which have had an important role to play in developing the natural sciences, the author says that these schools were marked by the democratic approach to creativity, which meant complete absence in scientific endeavour of any "table of ranks", recognition that the important thing was not a man's post but the power and originality of his thinking, the spirit of partnership in the quest for the truth, support for bold initiatives, respect for criticism, and the fostering of a capability for self-criticism. The author says that the Soviet school of physics led by A. Yoffe offers an example of the seminal scientific school.

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Методологические проблемы социальной психологии. М., изд-во «Наука», 1975, 295 стр.

Methodological Problems of Social Psychology, Moscow, Nauka Publishers, 1975, 295 pp.

This book opens with an introduction by E. Shorokhova on the problems and tasks of Marxist social psychology, briefly characterising the present state of this branch of scientific knowledge and highlighting the key theoretical and methodological problems. These problems may be described with varying degrees of detailisation. In "Systems-Forming Concepts of Social Psychology" N. Mansurov writes that most problems of social psychology may be grouped round two central problems, namely, association of people and the individual. The author raises the question of the need for considering general and specific features of different communities and organisations and illustrates his arguments with data from concrete research. He links the determinated nature of the individual with the study of the notion "way of life". In this article he makes an attempt to distinguish groups of factors determining the way of life of the individual.

A comprehensive study of socio-psychological phenomena and processes must inescapably include the important methodological question of their specifics. This is the subject of B. Parygin's article "The Problem of Mediacy in Social Psychology". The author's point of departure is that the socio-psychological reflection of reality is just as intricate as its ideological reflection. He criticises two extreme tendencies—the absolutisation of the spontaneity of socio-psychological phenomena, and the exaggeration of the role of their mediacy by psychological factors.

Since socio-psychological reflection is rooted in the activity of individuals and large and small groups, this reflection can only be studied by analysing human activity in its many manifestations. Of course, the question that inevitably arises is: What is the balance between individual and social activity? This question is examined by L. Buyeva in "Activity as an Object of Social Psychology". Here the contention is that there is no activity outside the social system and that there cannot be entirely isolated laws of social development and individuals. Buyeva shows that social activity must be analysed in the context of society's social structure and the relevant social relations and highlights the specifics of the socio-psychological approach manifested in a study of the inner, subjective aspect of activity.

In accordance with the principle of determinism the article "A Socio-Psychological Understanding of the Individual" by E. Shorokhova examines the distinctive influence of various factors on the individual. In this article Shorokhova names as socio-psychological specifics those features of the individual that appear under the influence of social relations. On this basis she formulates the task of social psychology in studying the individual, a task that consists of analysing in what specific features of the individual's mental make-up the social character of man is manifested; the operation of conditions giving shape to his social being and giving rise to such common psychical specifics that become national, professional, class, i.e., psychical phenomena predominant in a given society, at a given time and under given circumstances.

As empirical material accumulates it becomes exceedingly necessary to make a profound study of the individual's social psychology. It would be hard to overrate the importance of determining the primary concepts used by researchers. In the article "The Individual as an Object of Social Psychology" K. Platonov writes of the importance of forming a system of concepts of Marxist psychology that would dovetail with the system of concepts of general psychology and sociology. He examines "psychical reflection" and "interaction" as two basic concepts. In considering the individual as an object of social psychology, he bases himself on a conception that he had been working on for a long time, the conception of the individual's dynamic functional make-up which has vulnerable points and meets with objections from some researchers but which, nevertheless, unquestionably merits consideration.

In his article "On the Dispositional Regulation of the Individual's Social Behaviour" V. Yadov analyses extensive experimental and theoretical material showing the existence of adjusting mechanisms of the regulation of the individual's social behaviour and suggests his own, dispositional conception of this behaviour. He takes into account the diversity of the individual's relations to the conditions of his activity and regards these relations as a definite system, as an integral whole. As the common system-forming indicator of this integral whole he names various states and various levels of man's predisposition or readiness to perceive the conditions of his activity, his activity-directing preparedness that is fixed in one way or another in his personal make-up as a result of ontogenesis. The author understands these states and levels as dispositions, giving his own hierarchic system of dispositions and examining some mechanisms of its operation. A very attractive aspect of this disposition conception is that here the socio-psychological approach organ-

ically coalesces with the general psychological approach.

Some of the articles are devoted to problems of communication. In "Communication as an Object of Psychological Study" A. Leontyev underscores the need for special attention to the relationship between the individual and society in the process of communication. He examines the basic problems of the psychology of communication and deals with the sociological aspect of the concept of communication. He distinguishes four main psychological characteristics (coordinates) of communication that make it possible to classify its different types. These coordinates include orientation of communication, psychological dynamic of communication, semiotic specialisation of communication and the degree of the mediacy of communication.

Two articles by B. Lomov—"Communication as a Problem of General Psychology" and "Psychical Processes and Communication"—are closely interrelated. The concrete elaboration of problems of communication, Lomov writes, is becoming a prime condition of the further development of special psychological disciplines and also of the general theory of psychology. He believes that in showing the mechanism of the social conditionality of human psychics the elaboration of this problem is no less important than the study of his activity. He regards activity and communication as two interrelated aspects of man's social being. The theoretical propositions put forward by Lomov in the first article underlay his experiments in ascertaining the specifics of the dynamic of some psychical processes in direct communication. The data of these studies are analysed in the second article.

In the article entitled "Social Relations and Communication" L. Buyeva considers the correlation, volume and content of these categories. She writes that social relations and communication are the two sides of single social links forming the structure of a social system, that they are relatively independent and have their own specifics. "The Problem of Communication" by A. Brudny is devoted to the essence of communication, the impact of communication on the individual and the communicability of the individual. One of the most difficult tasks of a socio-psychological analysis of communication is to find the quantitative criteria of its different aspects.

The problems of communication are examined also by Yu. Sherkovin in "The Socio-Psychological Aspect of Propaganda". This article deals not only with ideological and social but also with the psychological distinctions between propaganda in a non-antagonistic society and in developed capitalist society.

In his article "Some Methodological Problems of the Study of the Psychology of Large Social Groups" G. Diligensky defines the concept "macrogroup psychology" and distinguishes objective and subjective-psychological macrogroups. On the basis of this distinction he shows the need for analysing the links between the objective and the psychological community of groups and the ways of transition of the first into the second. Further, Diligensky raises the question of the methodological aspects of the study of the socio-psychological community level of macrogroups and the factors forming this community. He pinpoints several levels of the community of macrogroups and shows how it forms.

S. Korolyov, author of the article "Elements of Spiritual Culture in Ethnical Psychology", underscores the determining influence of socio-economic factors on the shaping of ethnic psychology, noting also the reverse influence of the ethnic specifics on different processes of material and cultural life.

In "Social Norms as an Object of Psychological Study" M. Bobneva characterises psychology's points of departure in the approach to this problem and deals with some debatable points. She shows how the problems of social norms are treated in Soviet and in foreign sociology and social psychology. "Value Orientations and Mechanisms of the Social Regulation of Behaviour" by O. Zotova and M. Bobneva may be regarded as the logical continuation of the article we have just mentioned.

In his article "Socio-Psychological Characteristics of Anti-Social Behaviour" V. Kudryavtsev notes the typical features of the genesis of anti-social behaviour and shows how this behaviour is formed. In "Methodological Problems of the Development of Socio-Psychological Research in the USA" M. Andreyeva deals with the reasons for the recently growing attention accorded to psychology in the USA and notes the methodological difficulties encountered by American psychologists.

The articles in this collection are representative of some major trends in the Soviet studies of the methodology of social psychology. The theoretical questions examined in them are combined with forecasts of their possible application in the practice of communist education. The authors frequently draw on the data of general and social psychology and also of sociology. The publication of this book may be generally assessed as evidence of the successful development of Marxist social psychology.

A. Sventsitsky

Ю. И. СЕМЕНОВ. *Происхождение брака и семьи.* М., изд-во «Мысль», 1974, 308 стр.

Yu. I. SEMYONOV, *The Origin of Marriage and the Family,* Moscow, Mysl Publishers, 1974, 308 pp.

In this work, the author, who is a leading expert on the history of primitive society, deals with many questions of the history, economy and philosophical and methodological aspects of pre-class society and the epoch of its disintegration. A noteworthy point about this book is the largely new approach to complex problems, the polemic character of the exposition and the immense number of facts on which research is based. Even if the reader does not share some of Semyonov's views he will have a lot of mental pabulum. As a consistent proponent of the basic methodological and theoretical propositions of L. H. Morgan, who has been highly appreciated by the founders of Marxism, the author devotes considerable attention to substantiating Morgan's key ideas with modern ethnographic data, enlarges upon these ideas and, at the same time, points out what has become obsolete and requires correction in Morgan's theories.

Semyonov analyses the individual phenomena forming the institutions of the family and marriage and giving shape to their historical successiveness, and formulates his theoretical principle, according to

which the family and marriage are not age-old institutions of human society and marriage is not the only possible form of regulating relations between the sexes. He presents extremely interesting views on various sexual bans (sexual taboos, exogamy) which he characterises as major factors in the genesis of man and society. Touching upon the origin of man and sociogenesis, he underlines the idea that in the development from the primitive herd to class society there was a process in the course of which production came into conflict with the zoological individualism predominant among animals and made it necessary to curb that individualism. It must be noted that this view is by no means shared by all scholars.

Semyonov makes an attempt to reconstruct the history of marital relations among emergent human beings on the basis of a comparison of data on higher animals (in particular, primates), ethology, paleoanthropology and archaeology. Although he does not make a special study of the problem of anthropogenesis, referring the reader to other works written by him, he nonetheless makes a number of interesting observations.

Compared with his former views, he examines the primary form of union and family-marital relations among man's hypothetical ancestors from a new angle. He writes that the latest observations of monkeys have forced the renunciation of the surmise that among monkeys the harem family is the basic form of union. Actually, the basic form is the group consisting of a mother and children, who enter into a more complex union, the forms of which depend largely on the environment. Semyonov regards the institution of domination as playing a considerable role in regulating relations in the primitive herd and links the appearance of durable pairs with this institution. He justifiably regards production activity in that epoch as not individualistic but as collectivist, as creating advantages in the struggle against nature not for individual skilful producers but for entire groups. While agreeing with the author, we must note that his assessment of the development of production activity is somewhat simplified.

He believes that the transition to the use of natural implements and, thereby, to hunting precipitated an acute crisis in the system of domination, which began to be replaced by the social relations of egalitarian distribution of food (discriminate relations). This is unquestionably an interesting thesis, but what is not quite felicitous is that in regarding these relations as the most archaic the author relies on comparative data on peoples by no means the most backward of those known to ethnography (Eskimos and the Papuans of New Guinea) and whose development level cannot be compared either with Archaeoanthropes and Paleoanthropes or even with the early stages of the history of modern man.

The question of family-marital relations resulting from the transition from biological associations to social organisms is of exceptional importance from the standpoint of theory. Semyonov traces how the relations between the sexes were ousted from production collectives under pressure of production necessity. This, he believes, led to the emergence of group marriage. He offers an interesting interpretation of the character of promiscuous relations. These relations are regarded not simply as disorderly between the sexes, but also as a system of the existence of pairs that appear and fall apart depending on the desire of one or the other partner. This interpretation of this complex and debatable problem conforms to known biological and ethnographic data and is convincing. In my opinion, also justified is the view that although there were pairs at the early stages of the evolution of the primitive herd, there were no social norms regulating their union or separation. In the primitive herd the absence of such norms led to conflicts that prejudiced the conduct of the economy and slowed down the growth of production. Semyonov believes that to avoid this, sexual hunting-production taboos were introduced in periods of intensive economic activity. He traces in fairly great detail the hypothetical formalisation and development of sexual taboos, which, he considers, led to the formation of more or less isolated male and female-children groups in the primitive herd. Pairs thus disappeared during the period of the operation of sexual taboos. The further improvement of production activity led to the prolongation of the operation of sexual taboos and, with the passage of time, finally eliminated pairs, with the result that the unity of the primitive herd was substantially strengthened. In Semyonov's opinion, the processes that took place in this epoch had positive and negative results. Among the latter were the factors of isolation and inbreeding (breeding between kin), which among the late Neanderthals led to stagnation in production and morphological organisation. The way out of this situation was the dual-herd organisation, in which the making of the late specialised Neanderthals into Homo sapiens proceeded apace.

In describing all these processes the author gives a vivid and interesting picture and puts forward many new assumptions. However, here, too, some of his views are debatable, because from the biological standpoint his arguments are sometimes incomplete. First and foremost, he does not answer the main question: what were the reasons for the formation of new species in the process of anthropogenesis and what was the genetic mechanism of biosocial selection?

With the emergence of modern man the author quite justifiably links the appearance of the universal institution of exogamy and clan organisation. He regards group marriage as a relationship not between individuals but between groups. Initial group marriage is defined as bieconomic: the absence of individual marriage and family is observed. Marriage assumed a dislocal form: the partners lived in their respective clans and met only periodically. The conception of dislocal marriage is not new and has given rise to many arguments. Social anthropology does not know a single people among whom there were bilocal instead of individual syndiasmic marriages. References to various survivals are not always sufficiently convincing. It would be hard to bring the hypothesis about dislocal marriage into harmony with existing archaeological data.

In Semyonov's opinion, the appearance of syndiasmic marriage and of the syndiasmic family was due to the further development of the productive forces, to the emergence of a surplus product, which made the restrictions linked with discriminate relations unnecessary. The relations between the partners in marriages ceased to be reduced to sexual relations; they ceased to be purely personal and became simultaneously

economic and social, the relations of feeding, upkeep and dependence. But, as the author shows, these phenomena developed gradually, by stages. The appearance of the syndiasmic family (dependent unit consisting of a husband, wife and children) was preceded by a stage when adult women were linked, on the one hand, with men of their clan by a kind of relation of egalitarian distribution and, on the other, with men of an allied clan by a kind of relation of gift-exchange. With time, the syndiasmic marriage became unilocal, in other words, at first matrilocal and later patrilocal.

Semyonov consistently propounds the primacy and universality of the mother clan. He links its disintegration and the formation of the father clan with the appearance of syndiasmic marriage. He contends that, at the same time, syndiasmic marriage led to the replacement of the clan as an economic collective by production associations consisting of families. This production association was the community. In addition, Semyonov examines the various ways in which the community took shape in the light of the way of life of the different collectives.

In this study of the rise and evolution of monogamic marriage and the monogamic family, we feel that the author has made an interesting and generally successful attempt at classifying the development of the monogamic family in accordance with the different stages of history.

G. Markov

BIBLIOGRAPHY

NEW BOOKS IN THE SOCIAL SCIENCES PUT OUT BY PROGRESS PUBLISHERS IN ENGLISH

Below we publish annotations on new books by Soviet authors brought out in English by Progress Publishers, Moscow, in the latter half of 1976 and in 1977.

Y. Ambartsumov, *How Socialism Began*. Current Problems Series, 360 pp.

The author tells about the socialist transformations in Russia, about the materialisation of Lenin's ideas in building the new society.

He takes issue with those of the Western Sovietologists who deny the historic significance of the experience of the Great October Socialist Revolution and the social transformations in the Land of Soviets.

I. Andreyev, *The Non-Capitalist Way. Soviet Experience and the Liberated Countries*. Problems of the Third World Series, 196 pp.

I. Andreyev, D. Sc. (Philos.), essays a socio-philosophical understanding of the problems of non-capitalist development in a number of African countries as a specific form of transition to building socialism.

The role and place of the community in socio-economic reforms is analysed on the basis of the experience of socialist construction in the Soviet Central Asian republics and of the advance of the national minorities of Siberia and the Soviet Far East.

A. Arnoldov, *On the Path of Cultural Progress*. Socialism Today Series, 160 pp.

A. Arnoldov, D. Sc. (Philos.), inquires into the Marxist-Leninist concepts of culture, cultural progress, and the cultural revolution, discusses current problems of culture in the developed socialist society of the USSR and in other socialist countries, shows the humanism of socialist culture and its role in moulding the new man.

S. Vladimirov, L. Teplov, *NATO: a Bleak Picture*, 215 pp.

Drawing on a wealth of factual material the authors reveal the methods used in establishing the supremacy of the US military machine over the armies of other states.

Much space is devoted to exposing NATO as an instrument for preparing a new war and to showing its effect on the economies of the United States and the other countries engaged in militarisation.

The authors convincingly demonstrate the discord within NATO and the inevitability of such discord.

Communism: Questions and Answers, Issue 4, 182 pp.

This collection of articles is the latest in the series describing various aspects of communism as the theory and practice of hundreds of millions of people.

This issue tells of the Communist approach to the family, what they consider to be man's true wealth, how and why the socialist countries help the Third World in its economic development, how Communists understand freedom of creation.

V. I. Dobrenkov, *Neo-Freudians in Search of "Truth"*. Theories and Critical Studies Series, 168 pp.

The author analyses the socio-historical, ideological and theoretical sources of neo-Freudianism, shows what caused the emergence of the neo-Freudian school of psychoanalysis. He emphasises the untenability of the attempts to synthesise Freudianism and Marxism, to explain the dynamic of the historical process from the psychological point of view and to resolve the problems of the interaction between man and society from the positions of anthropological psychoanalysis. The author centres attention on a critique of the views of Erich Fromm, a leading exponent of the neo-Freudian school of psychoanalysis.

A. Lashin, *Socialism and the State*. Socialism Today Series, 552 pp.

The monograph shows the international significance of the CPSU's experience in state building, the Leninist principles of building a socialist state with due account for concrete historical and national features in different countries of socialism. The author examines problems connected with the CPSU's activities to improve the work of the Soviets and promote socialist democracy, and guide the entire system of the political organisation of society under developed socialism.

K. Mikulsky, *Lenin's Teaching on the World Economy and Its Relevance to Our Times*. Current Problems Series, 336 pp.

The author describes the contribution of the Communist and Workers' parties to the Marxist-Leninist theory of the world economy, analyses new trends in world economic development and the collective experience of the socialist nations in organising the socialist economy.

B. Pyadyshev, *The Military-Industrial Complex of the USA*, 192 pp.

The book gives the reader a picture of the military-industrial complex, shows how the reactionary forces forming the complex influence the economic, political and spiritual life of American society, how closely the US military-industrial complex is connected with the international reaction.

The Role of the State in Socio-Economic Reforms in Developing Countries. Problems of the Third World Series, 240 pp.

This book, prepared jointly by Soviet, Bulgarian, Czech and German scholars, shows the essence of the modern state ant its role in the developing countries, both of the socialist orientation and of those where the processes of capitalist development prevail. The book offers a detailed analysis of the main lines in the work of the state: guidance of the state sector, financing and crediting of economic development, planning, the carrying out of agrarian reforms, regulation of employment and training of personnel, promotion of foreign economic relations.

Contemporary Anti-Communism: Policy and Ideology. Theories and Critical Studies Series, 334 pp.

The book, written by a group of scientists from the GDR and the USSR, examines the evolution of the forms and methods of anti-communism which is the ideology of imperialism and the basis of its general political strategy in the struggle against world socialism and the international working-class and national liberation movements. The change in forms and methods is dictated by the successes of the world revolutionary forces, the unfolding scientific and technological revolution and the development processes within state-monopoly capitalism itself.

Philosophy in the USSR. Problems of Dialectical Materialism, 272 pp.

Among the contributors to the collection are the leading Soviet philosophers: Academician P. Fedoseyev, Corresponding Member of the USSR Academy of Sciences T. Oizerman, Professors A. Leontyev, G. Kursanov, and E. Ilyenkov.

The reader will find here elucidation of the general methodological principles of modern scientific cognition, of scientific and philosophical world outlook, and of current problems of dialectical logic. Drawing on the latest research, the authors analyse the active nature of human consciousness, the social nature of consciousness and its correlation with man's individual psychology, the role of social practice in developing scientific concepts. The book contains well-reasoned criticism of present-day conceptions of idealism.

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Abbreviations:
Рец.=book review
В сб.=in the collection
В кн.=in the book
Вестник МГУ=Вестник Московского университета;
Мировая экономика...=Мировая экономика и международные отношения;
Научные доклады...=Научные доклады высшей школы;
Новые книги...=Новые книги за рубежом по общественным наукам;
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OUR GLOSSARY

SOCIO-ECONOMIC FORMATION—a certain type of human society at a definite stage of its historical development. A socio-economic formation is based on a *mode of production* which is a unity of the *forces of production* (means of production, i.e., instruments and objects of labour, and people using them to create material wealth) and the *relations of production* (social relations of people in the process of production and distribution of the material wealth, forms of the ownership of the means of production, the status of the classes, social groups in production and their interrelations). The sum-total of the relations of production constitutes, according to Marx, the economic structure of society, the real foundation on which rises a legal and political superstructure and to which correspond definite political, legal, philosophical, religious, artistic and other forms of spiritual life (see K. Marx, F. Engels, *Selected Works*, Vol. I, Moscow, 1969, p. 503). Among all social relations the relations of production emerge as the basic, primary, determining all other relations (see V. I. Lenin, *Collected Works*, Vol. I, pp. 137-138). It should be stressed, however, that a socio-economic formation should not be reduced to a mode of production as it involves all aspects of social being and consciousness in their organic unity.

The category of socio-economic formation occupies a central place in *historical materialism* (Marxist theory of the development of society); it helps to distinguish one period of history from another, to identify what common is to be found in different countries passing the same stage of historical development. Marxism offers the following classification of historically constituted socio-economic formations: primitive communism, slavery, feudalism, capitalism (antagonistic); communism. The consecutive replacement of socio-economic formations takes the form of qualitative leaps.

A socio-economic formation seldom appears in its pure and simple form. Within the framework of the above-mentioned formations there was a considerable variety of transitional forms and specific variants, which does not deny the Marxist-Leninist division of the historical progress of mankind into formations but makes it still richer in content. The socio-economic formations constitute an integral whole, which corresponds to the objective dialectics of history, for they are

interconnected not only by the continuity of the forces of production but also by their mutual negation in the form of social revolutions.

SUBJECTIVE FACTOR IN HISTORY—the active, deliberate, purposeful activity of the subject which is cognising and changing the world, nature and society; activity which includes ideological, political and organisational levels and forms and is aimed at changing, developing or preserving the objective social conditions. The subject here means the masses, classes, parties and not necessarily individuals.

The category of subjective factor reflects the motive forces of history, the importance of practice in changing the objective reality; it is coterminous with the category of objective factor or objective conditions. The interaction of the two factors is reflected in the tenet of historical materialism that history is made by people, by the working masses. At definite stages of the historical process the subjective factor has a decisive role to play in the transformation of social relations.

The objective conditions under socialism lead to a sharp growth of the role of the subjective factor. The communist social formation appears and develops as a result of the creative activity of the popular masses under the leadership of a Marxist-Leninist party. "Communism differs from all previous movements in that it overturns the basis of all earlier relations of production and intercourse, and for the first time consciously treats all natural premises as the creatures of hitherto existing men, strips them of their natural character and subjugates them to the power of the united individuals" (K. Marx, F. Engels, *The German Ideology*, Moscow, 1968, pp. 87-88).

Recognising the objective regularity of the development of society, Marxism-Leninism rejects both the fatalistic theories which deny the role of the subjective factor in history and the idealistic views of the sociologists who explain the course of historical development by the activities of "great men" who tower above the passive "mob".

STATE MONOPOLY CAPITALISM—the highest stage in the evolution of monopoly capitalism which is characterised by the merging of the monopolies and the state, by the growing role of the state machine in the economy of the capitalist countries, by the increased domination of the financial oligarchy. The material basis of state monopoly capitalism is formed by the highly concentrated industry and the highly centralised capital, both joint-stock and state.

A comprehensive analysis of state monopoly capitalism as an extremely intricate complex of the economic, social, national, intra- and inter-state relations inherent in imperialism is to be found in the works by Lenin who was the first to use this term (see V. I. Lenin, *Collected Works*, Vol. 24, pp. 305-306). The gist of the notion expressing both the essence and the aims of state monopoly capitalism, lies in the combination of the power of the monopolies with the power of the state into a single mechanism securing financial capital's political and economic interests, the monopoly profit being

their condensed expression (see V. I. Lenin, *Collected Works*, Vol. 24, pp. 402-403).

State monopoly capitalism has the following basic forms: the direct subordination of enterprises, banks, whole branches of industry and transport to the state power; the founding of mixed joint-stock companies with private capital participating; the creation of state-budget enterprises; direct participation of the state in credit relations and trade turnover as both seller and purchaser and in the expansion of the state market; the state's accumulating huge sums of money and financing large-scale projects; taking integration measures on the international level; subsidising and preferential tax rating of private companies; regulating (planning and programming) of economic life, etc. Among the features of state monopoly capitalism there are also the active use by the monopolies of the political and administrative potential and economic might of the state for their direct intervention in the processes of production, circulation and distribution and, consequently, in the appropriation of surplus value; the further consolidation of the personal union of the top state executives (both civil and military) with the owners of considerable corporate property and the joint-stock company leadership; the growing influence of sectoral and national entrepreneurs' unions on the main directions of the government's activities and its policy. This does not mean, of course, that there cannot be certain collisions between the state and individual monopoly groups, between current economic interests of the monopoly bourgeoisie of a given country and some broader state and political considerations which ultimately express its long-term economic objectives.

A certain form or a combination of forms of state monopoly capitalism is to be found in each capitalist country depending on the historical conditions and existing situation. State monopoly capitalism does not appear in its "pure" form, because in industry, agriculture and services there remains a certain part of medium-size and small non-monopoly enterprises.

The development of monopoly capitalism into state monopoly capitalism is objectively conditioned by the inner regularities of the capitalist reproduction under imperialism.

In its evolution, state monopoly capitalism has passed several stages, the first of which covers the period between the turn of the century and the First World War, and the last, current one, began in the latter half of the 1950s. Now we witness the strengthening of the interdependence of objective and subjective factors of the development of state monopoly capitalism, the growth of the "feedback" influence of the political and ideological conceptions of the monopoly bourgeoisie on objective economic processes. Extraordinary measures of state monopoly regulation of the economy to be used in critical situations of a world war or a grave economic crisis are now becoming part and parcel of the entire capitalist reproduction mechanism.

The Editors intend to publish an article on state monopoly capitalism in the nearest future.

ECONOMIC ACCOUNTING (khozrashchyot)—a category of the political economy of socialism, a method of socialist management.

As an economic category it means a sum-total of the relations of production which appear in the process of functioning of the economically relatively independent primary elements of the national economy. This sum-total includes the economic relations between the enterprise (trust, combine) and the state, between the enterprises themselves, and between the enterprises and individual citizens. Being an objective economic category, economic accounting is inherent in socialist economy.

The essence of economic accounting as a method of socialist management lies in the *self-paying nature* and *profitability* of industrial enterprises, in their responsibility for a rational use of allocations granted and their *financial concern* in the results of their economic activity defined by the state plan. "I think that trusts and factories have been founded on a self-supporting basis precisely in order that they themselves should be responsible and, moreover, fully responsible, for their enterprises working without a deficit" (V. I. Lenin, *Collected Works*, Vol. 35, p. 546).

Economic accounting has a great role to play in the system of planned management of the economy; it is above all an integrated means, an instrument of state control over the primary elements of the national economy (1); it helps to ensure the coordination of the national interests that are considered supreme in a socialist society, with the economic interests of enterprises and amalgamations, and also with the personal economic interests of working people (2); it is through economic accounting that other economic levers (price, profit, credit, bonus, etc.) manifest themselves and operate (3).

The unity and mutual supplementation of the state plan and economic accounting, the combination of the centralised management and the initiative of enterprises is a key idea of the Leninist teaching about the principles of socialist management.

The relative economic independence of the primary elements of the national economy means that each of them, within the limits of the state plan, uses the granted funds and allocations independently; displays initiative in organising production and marketing, acts as a juridical person, receives credits from the bank, solves questions connected with the hiring, firing and using of labour. The funds of an enterprise are in economically isolated circulation. An enterprise covers all its expenses by its own profits, is financially responsible for non-fulfilment of the plan and contractual obligations, and gets a fixed share of its net income (profit).

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