

# SOCIAL SCIENCES

Soviet Economic Development  
in the 1980s

Philosophical Aspects  
of Natural Science

Science, Technology, Humanism

International Industrial  
Cooperation

Strategy of Nuclear Madness

Dostoyevsky  
and World Literature

1

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USSR ACADEMY OF SCIENCES

# SOCIAL SCIENCES

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Philosophy

History

Economics

Politics

Sociology

Law

Philology

Psychology

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Archaeology

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## To the Reader

*Today nothing is more important than peace. More and more people the world over are coming to realise the need for active participation in the struggle to deepen detente and curb the arms race. Soviet scientists unanimously support the policy of peace pursued by the CPSU and the Soviet Government, the Peace Programme for the 1980s outlined at the 26th Congress of the CPSU.*

*We open this issue with the Appeal of Soviet parliamentarians to the parliaments and peoples of the world to redouble their efforts to avert a thermonuclear catastrophe. The Appeal has met with worldwide response.*

## Philosophical Aspects of Natural Science

*This issue carries several papers contributed by Soviet scholars to the All-Union Conference on the Philosophical Problems of Modern Natural Science held in Moscow in April 1981 and attended by prominent Soviet specialists in the social and natural sciences. They discussed the most topical problems of their respective fields of knowledge in the light of the decisions taken by the 26th Congress of the CPSU, which mapped out a broad programme of accelerating scientific and technological progress which would make for successful accomplishment of the tasks of communist construction. President of the USSR Academy of Sciences, Academician **A. Alexandrov**, who opened the conference, spoke about Lenin's ideas about the interconnection of the sciences. He said: "Lenin armed natural science with a worldview and with a method adequate to its nature—materialist dialectics." Vice-President of the USSR Academy of Sciences, Academician **P. Fedoseyev**, who is also Chairman of the Editorial Council of this journal, noted that a most distinctive feature of the elaboration of the philosophical problems of natural science is that they are oriented to the study of science's influence on social progress. In this connection priority is given to the development of the fundamental sciences which provide knowledge of the laws of nature and society, to the creation of the technology of the future and possibilities for satisfying the requirements of mankind over a long*

period. Academician **V. Engelgardt** studied the interrelation of such concepts as "science", "technology" and "humanism" in terms of the scientist's social responsibility. Academician **A. Bayev** emphasised that biology today does not confine itself to cognition of the surrounding world and man as part of it but facilitates the transformation of the world in the interests of man. Academician **D. Belyaev** writes that the distinctive feature of *Homo sapiens* is his diverse spiritual, intellectual and creative abilities and that he is developing according to certain social laws. Corresponding Member of the USSR Academy of Sciences **I. Frolov**, who is a member of the Editorial Council of this journal, stressed the urgent need for a socio-ethical and humanistic regulation of science noting that this fact is treated differently under socialism and under capitalism. The well-known explorer of the Polar regions Academician **E. Fyodorov**, Chairman of the Soviet Peace Committee, noted that in the conditions of the rapid development of science and technology, and the growth of production and consumption, problems of the environment and rational use of the natural resources are becoming especially pressing and imperatively call for peace and cooperation on our planet.

## Economics

In the light of the proposition formulated at the 26th Congress of the CPSU that concrete concern for the concrete person is the alpha and omega of the Party's economic policy, **P. Ignatovsky** describes the specific features of Soviet economic development in the 1980s. **Yu. Shiryaev** shows how the production, scientific and technological cooperation of the CMEA countries facilitates the further progress of their economic integration and the consolidation of the positions of the socialist community in the world economy.

## Modern and Contemporary History

In his analysis of the neocolonialist concept of the "interdependence of nations" **M. Volkov** emphasises that the Soviet Union holds that the relations with the young states should be based on the principles and norms of international law and advocates genuine equality of those states in the economic and political life of the world today, and full recognition of their sovereignty. Exposing the ominous meaning of US imperialism's strategy concerning a "limited" and "protracted" nuclear war, **A. Arbatov** writes that the CPSU and the Soviet Government are not relaxing their efforts in the present complicated situation to improve the political climate and halt the arms race. **Yu. Sherkovin** writes that the alliance between the ultra-left in the West and the bourgeois mass media serves the purpose of diverting the working people, and particularly the youth, from the class struggle, and channels their efforts in a false direction aimed at splitting the working-class movement.

## Literary Criticism

We publish a review of a round-table conference sponsored by the *Inostrannaya literatura* journal to mark the 100th anniversary of the death of the great Russian writer Fyodor Dostoyevsky and devoted to the subject "Dostoyevsky and World Literature".

## Theory and History of Science

**V. Lektorsky** presents the Marxist interpretation of such elements of the theory of cognition as self-consciousness and reflection as well as their role in scientific knowledge.

## Sociology

The article by **V. Shubkin** and **G. Cherednichenko** sums up the results of the comparative international sociological study "The Life Careers of Young People in Socialist Society", made within the framework of the Problem Commission for Multilateral Cooperation of the Academies of Sciences of Socialist Countries "The Working Class in the World Revolutionary Process".

This issue, as usual, contains information about international, bilateral and all-Union meetings of social scientists and an extensive bibliography. In particular, readers interested in studies by Soviet jurists will find an annotated list of the latest works of the Institute of the State and Law, USSR Academy of Sciences.

Readers' suggestions regarding the topics discussed in our journal are always welcomed.

## **Appeal of the Supreme Soviet of the USSR TO THE PARLIAMENTS AND PEOPLES OF THE WORLD**

*From the Editors: Below is the full text of the Appeal of the Supreme Soviet of the USSR to the Parliaments and Peoples of the World adopted by the USSR Supreme Soviet on June 23, 1981.*

*Having advanced it on behalf of the CC CPSU and the USSR Supreme Soviet Presidium at the Fifth Session (Tenth Convocation) of the USSR Supreme Soviet, Leonid Brezhnev emphasised that "the very nature of up-to-date weapons has become such that, if used, the future of all mankind would be at stake. "There is only one way out: one must now, today, do one's utmost to bar the road to those who love unrestricted armament and military gambles. One must do the utmost to safeguard the right of people to life. No one can be an indifferent onlooker in this matter; it affects all and everyone." The Appeal was unanimously adopted by the Soviet Parliament and enthusiastically supported by all Soviet people.*

The Supreme Soviet of the Union of Soviet Socialist Republics, anxious about the increasing military danger, the unprecedented scope of the arms race, appeals to the parliaments and peoples of the world.

The Supreme Soviet of the USSR issues this Appeal on the 40th anniversary of the invasion of our Homeland by Hitler fascism. The Soviet people pay homage to the glorious memory of the 20 million countrymen who fell in the war. World War II inflicted incalculable misfortune and suffering on all mankind. We deeply revere the memory of all who gave their lives in the struggle against aggression, for the sake of peace on earth. History has taught a stern lesson. The peoples have paid far too high a price for the failure to prevent war and to avert in good time the threat hanging over the world. A repetition of the tragedy must not be allowed. Everything must and can be done to prevent another world war.

The world is already oversaturated with weapons of mass destruction, yet their stockpiling continues. Increasingly sophisticated and destructive arms are being developed. Launching pads are being prepared for

hundreds of new nuclear missiles in Western Europe. People are being conditioned to accept the criminal idea of the permissibility of the use of nuclear weapons.

Political tension is being whipped up. Once again a bid is being made for military superiority. The language of threats is being resorted to. Claims to intervention in the affairs of other countries and peoples are being openly advanced. And this is all covered up by the crude invention about a "Soviet military threat".

The Supreme Soviet of the USSR solemnly declares: the Soviet Union does not threaten anyone, does not seek confrontation with any state in the West or the East. The Soviet Union has not pressed and is not pressing for military superiority. It has not been and will not be the initiator of new rounds of the arms race. There is no type of weapons it would not agree to limit, to ban on a mutual basis, by agreement with other states.

The safeguarding of peace has always been and remains the supreme aim of the foreign policy of the Soviet Union. This is the aim of the Peace Programme for the 1980s, adopted by the 26th Congress of the Communist Party of the Soviet Union. It embraces steps for the reduction both of nuclear missiles and conventional arms, contains proposals for the settlement of existing and the prevention of new conflicts and crisis situations, and is permeated with the desire to deepen detente and develop peaceful cooperation among countries on all continents. It expresses the readiness of the Soviet Union to hold negotiations on all topical issues of peace and security, and to give careful consideration to any constructive ideas advanced by other states.

In this nuclear age dialogue and negotiations are equally needed by all, just as peace, security and confidence in the future are needed by all. There is now no rational means of solving disputed problems, no matter how acute and complex, other than by negotiation. Not a single opportunity must be missed. There is no time to lose!

The risk of a nuclear conflict increases with each day lost for negotiations. The solution of the vital problems confronting every nation and all peoples is being postponed. There is no time to lose!

In our day all those who by their actions encourage the arms race and the further stockpiling of weapons of mass destruction of human beings, who advocate the use of force in the solution of disputed issues between states, or who simply close their eyes to the danger threatening the world today, are in effect impelling mankind towards the abyss.

The Supreme Soviet of the USSR appeals to the legislative bodies of all countries to speak out vigorously in favour of negotiations which would result in the prevention of another round of the nuclear missile arms race—honest and equal negotiations without any preliminary conditions or attempts at diktat.

The Supreme Soviet of the USSR trusts that its Appeal will be given the attention this most important, most pressing issue of our time deserves. It is convinced that parliaments have the necessary prerogatives and authority to press effectively for curbing the arms race and for disarmament along the road of negotiation. On its part, the Supreme Soviet of the USSR will continue to make its contribution to the creation of an atmosphere conducive to the achievement of positive results through negotiation.

Peace is the common asset of all mankind, and in our time it is also vital to its continued existence. It is only through joint efforts that peace can and must be preserved and reliably safeguarded.

**The Supreme Soviet of the Union  
of Soviet Socialist Republics**

*The Kremlin, Moscow  
June 23, 1981*

## The Interconnection Between the Natural, Technical and Social Sciences

**ANATOLI ALEXANDROV**

**From the Editors:** This article by Anatoli Alexandrov, President of the USSR Academy of Sciences, is based on his speech at the All-Union Conference on the Philosophical Problems of Modern Natural Science held in April 1981 in Moscow.

In discussing the philosophical problems of modern natural science, we should emphasise the relevant contribution made by Lenin, who is known to be one of the major philosophers of our times. He fruitfully applied the dialectical method in analysing the philosophical problems of natural science and produced important works creatively developing dialectical materialism.

The scientific and philosophical significance of Lenin's ideas is fully retained in these days, too. Therefore, in considering the philosophical problems of *modern* natural science, we turn to the classical works of Lenin. In summing up research in this field and outlining its perspectives, we use Lenin's methodology, Lenin's philosophical generalisations and conclusions from the analysis of the development of contemporary natural science, above all physics, at a time of drastic changes in its concepts and ideas—changes that are now commonly referred to as scientific revolutions.

If one were to try to express literally in a few words the significance of Lenin's analysis, it may be said that he armed natural science with a scientific world outlook and method suited to its nature, that is, materialist dialectics. Lenin showed the philosophical significance of the incipient revolution in physics and formulated the basic principles of its analysis, ruling out any incompetent interference in the research carried out by natural scientists themselves and at the same time providing them with world-view bearings in the philosophical struggle, revealing the epistemological and methodolog-

ical foundations and the nature of cognition in modern natural science. That is precisely the basis of Lenin's idea of the union between Marxist philosophers and natural scientists.

The completely non-trivial propositions concerning the links between the development of science and the development of technology and production sound quite natural today. It was Lenin who pointed out the importance for dialectical materialism of the development of "feedback" connections between material production and technology, on the one hand, and the development of science, on the other. At present, we regard these propositions as generally accepted, and we discuss them continually, but then they were expressed for the first time.

Lenin sharply criticised the physicist and philosopher Mach and his mechanistic world-view. He fought all those trends which opposed, early in this century, the idea of atomic structure of matter. Lenin pointed out that hardly any branch of natural science may be regarded as accomplished and that further development of science always leads to new discoveries—to new horizons even in those fields which earlier seemed to have been studied exhaustively. This may be observed every day—one may watch the development of modern science and see how many discoveries have been made since the days when Lenin studied these questions. The theoretical propositions formulated by Lenin are still valid in our times. Soviet science is built on the principle that, simultaneously with the advancement of the fundamental sciences, applied sciences must also be developed, and that they mutually enrich and facilitate the progress of each other.

Such an apparently accomplished branch of science as optics (it did seem accomplished at the beginning of the century) has started quite a new life when linked with quantum electronics. Quantum optics is a road to further progress in this field.

In our times, our conceptions of the structure of matter have become more and more complicated. The model of the atomic nucleus consisting of protons and neutrons, which in the 1930s seemed perfect, later gave way to more complicated schemes. The number of newly discovered elementary particles grew, and they were proved to be transformable into one another. Recently, new steps have been taken here, and the novel idea of quarks has been formulated. This idea unified our conceptions of elementary particles. However, here too one had to introduce new categories recently.

We are now living through a very interesting period in the development of physics, when it rapidly develops particularly in the field of elementary particles. Major events take place in astrophysics, too. In general, the fundamental phenomena of physics are now reconsidered and discussed anew, in the light of new events.

The same process takes place in biology, which in the recent times has completely given up the mechanistic approach. Molecular biology has opened up entirely new ways of understanding living matter, and now this field of science undergoes rapid development.

Lenin's view was that all the necessary directions of science and technology should be evenly developed in this country. This position has played a very important role. Lenin directly participated in the organisation of new scientific institutes soon after the October Revolution. The old Academy had in fact no research institutes. The oldest of us witnessed the emergence of these institutes.

In 1918, a special aerohydrodynamic institute was organised. In the same year, a polytechnic institute was founded in Leningrad. At the same time were organised the radium institute and the optical institute, the latter facing the task of not only developing research in this field but also creating optical industry in the country, previously non-existent.

In the same way, the Physico-Technological Institute actually laid the foundations of solid-state physics, semi-conductor physics, which has achieved such great progress, and at the same time made an enormous general contribution to the development of science in this country. This aim of building a solid front in science proved to be the correct and creative one, and science in this country continues to move in this direction.

Lenin ascribed a great significance to the continuous development of technology on the basis of the latest achievements of science. His famous formula, "Communism is Soviet power plus the electrification of the whole country",<sup>1</sup> containing an apparently unexpected combination of terms, played a very important role.

As early as 1918, when the Academy of Sciences was given the assignment to study the natural resources of this country and to work out suggestions for rational distribution of industry, Lenin wrote that this had to be done on the basis of the country's own raw materials, its own machinery, by its own workers, and that attention had to be paid to the introduction of electricity, to the electrification of the whole country. The GOELRO Plan was compiled on Lenin's initiative. It is well known that events then took unexpectedly interesting turns sometimes. I remember reading a document indicating that insulators were necessary for the development of electrification. Previously, insulators were obtained in Germany. The Academy of Sciences was instructed to find deposits of porcelain clays out of which insulators might be made. It is interesting to note that the report on this subject describes certain deposits of clays and their location. It is pointed out, among other things, that the clays were in the Soviet part of the Voronezh Region. One can just imagine at what time the prospecting for those clays was done! (The Region was divided by the frontlines of the Civil War.)



The initiative of the Academy of Sciences in guiding the distribution of industry and its willingness to carry out the assignments of the Soviet Government were very significant at the time. Lenin's approach to the problem was psychologically quite justified. Men of creative mind in the Academy could not remain indifferent to this appeal to engage in creative work and to build industry on a new basis. Psychologically, that was a correct step which yielded considerable results.

This Leninist policy continues to this day.

The 26th Congress of the CPSU evaluated quite highly the successes of Soviet science and at the same time insisted that scientific institutions showing poor results could not be tolerated.

The Congress has stressed that science in our times is a direct productive and creative force in all the aspects of social development. This is true of the entire range of modern scientific disciplines—both the natural and the social sciences. Leonid Brezhnev said: "The Communist Party proceeds from the premise that building up a new society without science is simply inconceivable... science itself should be a constant 'trouble-maker', pointing to the areas where there are signs of stagnation and backwardness, where the present level of knowledge could secure faster and more successful advancement."<sup>2</sup>

Of course, we must concentrate on the development of fundamental research and its links with practice. Of primary significance here is the progress of natural science, which is to a considerable degree conditioned by the development of research technique, and the application of computer technology and advanced mathematical methods.

Of the greatest interest is, however, the fact that the main "growth points" are now located (and this tendency is expected to increase) at the junction of different scientific disciplines, both within natural science and outside it. Of great importance in these days is therefore the interaction between sciences, a comprehensive approach to the solution of interdisciplinary problems. This is pointed out in the "Guidelines for the Economic and Social Development of the USSR for 1981-1985 and for the Period Ending in 1990", where the task is formulated as follows: "To step up the interaction of social, natural and technical sciences."<sup>3</sup>

Marxist-Leninist philosophy, materialist dialectics as the methodology of modern scientific cognition, must also play its synthesising and integrating role. The philosophical problems of modern natural science are one of the centres of intersection of scientific research and interpretation of its methodological foundations, a broader view of the world of nature and the place of man himself in it. This broad conception of the philosophical and social links and relations between natural science, man and society was thoroughly substantiated by Lenin. This tradition should be creatively developed in every way,

new problems must be searched for and investigated that are interdisciplinary in nature and require a comprehensive approach to their solution.

The Comprehensive Programme of Scientific and Technological Progress for 1985-2000 brings home the importance of this approach ensuring interaction between different sciences. This will also underlie the elaboration of the principal trends in the development of scientific research in the natural and social sciences up to 1990.

Take, for instance, the energy programme which was the focus of attention at the 26th Party Congress. The energy problem has become most acute in the whole world, it has proved to be not only a complicated economic, scientific and technological but also a social and political problem requiring a concerted effort by all modern sciences and practice, implementation of long-term programmes which will differ, of course, in the socialist and the capitalist countries. This is also true of the food programme now being worked out in this country, the public health and other programmes.

That is why particular attention is being given to establishing links and interconnections not only within the framework of the Academy of Sciences but also between the academies of the separate branches of science, such as the Academy of Agricultural Sciences, the Academy of Medical Sciences, and others, as well as research institutes of various departments and ministries. Our goal is clear: to ensure a maximum concentration of scientific effort, step up the efficiency of research, its links with the practical tasks of our society, its further advancement towards communism.

Of considerable significance is here the correct world-view and methodological orientation, including the orientation in the philosophical problems of modern natural science. Recently, these problems have been given considerable attention, and that has brought certain positive results: a whole series of interesting and significant works have appeared, including those written jointly by philosophers and natural scientists. The results of their work are reflected, in particular, in the books that have appeared quite recently—*Philosophy, Natural Science, the Modern Times: Results and Prospects of Research, 1970-1980*, and *Lenin's Philosophical Legacy and Modern Physics*.

Now new tasks in the study of the philosophical problems of modern natural science have been outlined, and new ways for consolidating and developing the Leninist union between philosophers and natural scientists pointed out.

It is especially important to indicate the new problems for philosophical research, new directions for joint creative activity of philosophers and natural scientists. I would like to stress in particular the *creative* character of this work, ruling out scholastic theorising

and proving what has long been proved—a point that was stressed at the 26th Congress of the CPSU.

The General Meeting of the USSR Academy of Sciences held in March 1981 was devoted to the tasks of the Academy in carrying out the decisions of the 26th Congress of the CPSU. The meeting pointed out the need for concentrating the efforts of scientific institutions and scientists on the most important directions and problems, including the study of the interaction between the social, natural and technical sciences, and the philosophical and social problems of science and technology. The realisation of this programme will be coordinated by the Scientific Council set up in 1980 by the Presidium of the USSR Academy of Sciences to deal with "The Philosophical and Social Problems of Science and Technology".

The unification of the work of philosophers and natural scientists will contribute to the mutual enrichment of natural science and dialectical materialist philosophy.

Philosophers cannot hope to create a world-view system by a purely speculative effort. Similarly, natural scientists cannot hope to create anything fundamental without a profound analysis of the philosophical aspects of their problems. Joint work will ensure the success of both.

#### NOTES

<sup>1</sup> V. I. Lenin, *Collected Works*, Moscow, Vol. 31, p. 419.

<sup>2</sup> L. I. Brezhnev, *Report of the Central Committee of the CPSU to the 26th Congress of the Communist Party of the Soviet Union and the Immediate Tasks of the Party in Home and Foreign Policy*, Moscow, 1981, pp. 74-75.

<sup>3</sup> *New Times*, No. 11, 1981, p. 26.

## Lenin and the Philosophical Problems of Natural Science

PYOTR FEDOSEYEV

Lenin looked upon science as a revolutionary motive force of the progressive development of society. It was Lenin who coined the famous phrase saying that knowledge is "the great pride of humanity".

The Communist Party of the Soviet Union has been consistently following Lenin's concepts in guiding the development of science and in organising the practical implementation of its achievements. The 26th CPSU Congress has outlined a sweeping programme of speeding scientific and technological progress in order to raise the efficiency of social production and successfully resolve problems of communist development. "The cornerstone of scientific and technological progress," Leonid Brezhnev said addressing the Congress, "is the advancement of science."<sup>1</sup> Special attention is therefore given to the priority development of fundamental sciences, which ensure a more profound knowledge of the laws of nature and society, the steady enhancement of its scientific and technological potential as well as the creation of technical equipment and production processes of the future and of the possibilities of long-term satisfaction of the requirements of mankind. Fundamental sciences also owe their significance to the major importance of the scientific knowledge of nature and society in shaping people's world outlook, to the philosophical conceptualisation of the world and of man's place in it. This is what lends particular urgency to the problem of interrelation and interaction between philosophy and natural science.

In the Soviet Union, as in other socialist countries, philosophical problems of modern natural science are being tackled on the basis of creative application and development of materialist dialectics. The

Lenin-bequeathed union of Marxist philosophers and natural scientists has been gaining in strength and renewing its essence. Interrelations between the said philosophers and scientists have had a complex long history. Alongside successes, it has seen difficulties and departures from the Leninist principles of the union of natural science and philosophy.

In recent years Soviet scientists have achieved considerable successes in obtaining a constructive solution of philosophical problems posed by the natural sciences and in their critique of the interpretations of modern natural science in a spirit hostile to Marxist-Leninist philosophy. Remarkably, the development of philosophical problems of natural science in this period has been oriented to the study of the growing impact of science, above all, natural science, on social progress. There has been a dramatic increase in attention to philosophical and, more broadly, socio-philosophical problems of science against the background of the present scientific and technological revolution.

#### LENINIST PRINCIPLES OF PHILOSOPHICAL ANALYSIS OF NATURAL SCIENCE AS APPLIED IN OUR DAYS

These principles can be summed up as the dialectical unity of, and a difference between, philosophical and natural-scientific knowledge. Its unity stems from the fact that both philosophy and natural science study a single objective world, a world independent of human consciousness. In terms of natural science, Lenin pointed out, it is indubitable that nature antedated the rise of man and his consciousness. The existence of the external world independent of consciousness, Lenin continued, also forms a basic tenet of materialism. Each natural science is concerned with a certain field of nature, its inherent form of motion, its specific relationships and regularities. Materialist philosophy discovers a common element in phenomena, common regularities and relationships intrinsic to different systems and structures of the objective world. Philosophy does not create new theories of the physical world. Nor does it identify itself with some specific natural scientific concept. Philosophy draws epistemological conclusions from new findings of natural science and, basing itself on these findings, specifies, enriches and otherwise develops the general theory and logic of knowledge.

By generalising scientific achievements, discovering the common element in phenomena and identifying general relationships and regularities, philosophy contacts all areas of knowledge evolving general methodological principles applicable to any branch of science—another manifestation of its relationship with natural science. Each scientist, whatever his department of research, con-

sciously or unconsciously uses general concepts and categories (such as substance and form, causality, chance, quantity, quality, etc.). Each scientist in one way or another finds himself influenced by specific philosophical conceptions. This dictates his philosophical interpretation of experimental and theoretical findings. If this interpretation is adequate to nature, in other words, if it corresponds to objective truth, it is furnished precisely from the standpoint of dialectical materialism. Thus, philosophy and natural science interact as they study the objective world effectively complementing rather than substituting each other.

Lenin's epistemological analysis of findings of natural science disclosed the general sources and, at the same time, drew a line of distinction between philosophical and specifically scientific concepts. The best-known example is Lenin's definition of matter, which ended the identification of the philosophical concept of matter with specific natural scientific concepts of its structure and properties. According to Lenin's definition, epistemologically, the concept of matter does not signify anything but objective reality which exists independently of, and is reflected by, human consciousness.

Scientific progress is tantamount to the deepening of the knowledge of material objects. Because this deepening, observed Lenin, did not go further than the atom yesterday and does not go further than the electron today dialectical materialism insists on the temporal, relative, approximate character of all these *landmarks* in the study of nature by progressive science. "The electron is as *inexhaustible* as the atom, nature is infinite ...."<sup>2</sup>

Lenin consistently extended this approach to causality, space, time and many other fundamental concepts of philosophical materialism.

Materialism neither decrees nor rejects any specific physical version of causality assuming that it is a recognition of an objective natural law and an approximately correct reflection of this regularity in human consciousness. "The really important epistemological question that divides the philosophical trends," said Lenin, "is not the degree of precision attained by our descriptions of causal connections, or whether these descriptions can be expressed in exact mathematical formulas, but whether the source of our knowledge of these connections is objective natural law or properties of our mind, its innate faculty of apprehending certain *a priori* truths, and so forth."<sup>3</sup>

The same applies to space and time. Recognising the existence of objective reality, i.e., matter in motion, irrespective of human consciousness, philosophical materialism, as distinct from various concepts of idealism, also inevitably recognises the objective reality of time and space as objectively real forms of being rather than mere forms of phenomena—the parameters of their duration or extent.

Human concepts of space and time change, develop, become refined. However, the changeability of the natural scientific concepts of space and time does not invalidate their objective reality, any more than the changeability of the scientific knowledge of the structure and forms of the motion of matter invalidates the objective reality of the external world. It was precisely in this that Lenin saw the philosophical essence of the question, the essence of the philosophical approach to the cognition of the objective world.

The dialectical conception of the union of, and difference between, philosophy and natural science forms the basis for the growing cooperation between philosophers and natural scientists.

It is worth recalling that the negation of union and community of the basic positions of natural science and philosophy led to the underestimation of methodological problems, to philosophical indifferentism and even nihilism opening loopholes through which to smuggle in all possible concepts of idealism, philosophical relativism and agnosticism. On the other hand, the identification of philosophical and natural scientific knowledge and the incomprehension of differences between them led to a revival of the natural philosophical approach to knowledge, to incompetent interference of some philosophers in the handling of natural scientific problems, to baseless philosophical denunciation or, on the contrary, confirmation of some specific natural scientific trends and orientations.

The overcoming of the incompetence of the *Naturphilosophie* in approaching scientific problems, however, is not tantamount to some philosophical neutrality in interpreting new scientific findings. The underlying principle of the Leninist approach to the philosophical questions of natural science is an uncompromising struggle against idealistic speculations on the achievements of scientific knowledge, in other words, a struggle for the purity of Marxist-Leninist philosophy as well as for ensuring the best ideological climate for the development of natural science.

Lenin substantiated the principle of partisanship of philosophy, by which he understood the philosophical essence of all science. Lenin taught us to see a relationship between the class interests and the class position of the bourgeoisie, on the one hand, and the ideological essence of the reactionary philosophical trends which parasitise on the most recent scientific discoveries, on the other.

In his *Materialism and Empiriocriticism* Lenin subjected to devastating criticism those modifications of idealism which had arisen from the turn-of-the-century revolution in physics and the philosophical views of those natural scientists who failed to offer a consistent materialist (more exactly, dialectico-materialist) interpretation of what were then latest scientific discoveries. The critique of idealistic falsifications should be based on a materialist interpretation of such discoveries, on the solution of philosophical questions which

are posed by modern natural science and with which idealistic philosophers fail to cope.

It follows that the interaction between dialectical materialism and modern natural science is necessary to scientific progress and the development of philosophical thought. An analysis of great discoveries and other basic achievements of natural science does more than offer a natural scientific substantiation of dialectical materialism. It furnishes the basis for the enrichment of the entire categorical apparatus of philosophy.

The achievements of natural science, especially physics, have considerably enriched the theory of matter. The interconvertibility of elementary particles, the grasp of the laws of symmetry, the study of the physical vacuum—all reveal the amazing dynamism and inexhaustibility of microprocesses, which fact influences the entire system of knowledge of the material world.

It is known only too well how significantly the development of modern natural science has enriched philosophical determinism. The limitations of primitive determinism, otherwise known as classical, or Laplacian, is already generally acknowledged. The theory of determinism develops by imbibing ideas of dialectics and by incorporating concepts pertaining to the determination of a part by a whole, of possibility, probability, chance, purposefulness, etc.

The idea about interrelation between space, time and movement as forms of the existence of matter, advanced by Engels and developed by Lenin, has found its specific natural scientific embodiment in the theory of relativity. At the same time, these philosophical categories themselves have broadened their content as required by the level of modern science.

Lenin's proposition concerning the unity and objective character of scientific knowledge and the impermissibility of identification of philosophical categories with specific scientific concepts has played a considerable role in strengthening the dialectico-materialist world outlook stimulating, at the same time, the continued study of the fundamental laws of nature. For instance, a distinct differentiation between the philosophical and the natural scientific concepts of substance has been found to be intensely fruitful in the philosophical conceptualisation of specific problems of interaction between matter and motion and also between mass and energy advanced by modern physics. A notable contribution to the scientific substantiation of this differentiation was made by S. Vavilov, who emphasised that the transformation of substance into light does not in the least compromise the laws of conservation of matter.

Another equally characteristic example illustrating the above concept is furnished by modern philosophical debates on problems of astrophysics and cosmology. In the author's opinion, philosophical debates in this rapidly developing field of modern natural science are

largely due precisely to the insufficiently distinct differentiation of the philosophical category of the "material world" and the natural scientific, namely, cosmological concept of "the Universe as a whole". Terminologically, both are designated by one term "Universe"—a source of comparatively frequent serious misunderstandings. For instance, among the basic propositions of dialectical materialism is the principle of the infinity of the material world in space and time. In textbooks (and not in textbooks alone) this is frequently expressed in the form of the contention saying that the Universe is infinite and eternal. Meanwhile, the principle of evolution offers every reason to believe that the Universe—the subject matter of modern natural science—represents a formation, that develops in time, having emerged from some states and forms of matter which preceded it and will be replaced by its new states and forms. This makes it expedient to distinguish the term "Universe" as employed by a natural scientist, which designates the information about the Universe accumulated to date, from the philosophical concept of the material world.

By asserting the material unity and infinity of the world, philosophy does not predetermine the character of phenomena and processes where, as Engels put it, "our sphere of observation ends", in other words, where our knowledge ends at some particular moment. Beyond these bounds existence, according to Lenin, is really "an open question".<sup>1</sup> Its only remaining definition is materiality, i.e., objective existence, independent of any consciousness. Scientific knowledge increasingly broadens our "sphere of observation", i.e., the bounds of the cognised part of the world.

Among the regulative principles of the Leninist analysis of philosophical questions of scientific progress is the dialectical theory of the cognitive process, of movement from limited, relative knowledge towards more exact, broader knowledge, towards the absolute truth. In our age of rapid scientific development, of a dramatic breakup of traditional theories and concepts this theory has gained particularly great significance.

Recent years have seen a considerable enhancement of the interest in problems pertaining to revolutions in science, to the genesis and formation of scientific theories, to transitions from one fundamental theory to another, i.e., in questions which are directly related to the development of scientific knowledge.

Many publications discuss how science develops, what factors influence this development, how scientific theories succeed each other, how old and new theories are related, and other questions.

Exponents of the bourgeois methodology of science speak of some "incommensurability" of successive theories, i.e., deny all continuity of the development of scientific knowledge. This is why questions of the relationship between dialectics and relativism and of

the dialectics of the absolute and the relative in the development of science are currently being given a leading place in the philosophical conceptualisation of the reasons for, and the essence and motive forces of, scientific revolutions.

Relying on Lenin's ideas and analysis of the revolution in natural science at the turn of the century, which sparked an abrupt change in the concepts and ideas shaped at the previous stages of knowledge and which in many branches of knowledge continues to this day, Soviet philosophers proceed from the fact that the relative character of scientific knowledge represents a manifestation of the dialectical character of its development. However, this is only one aspect of the question, which should be considered in the context of its relationships with other aspects, especially its objectivity and the understanding of it as a moment in the approximation to absolute truth rather than in isolation from the overall historical pattern of scientific development. The historical development of science creates an increasingly broad adequate picture of natural and social reality.

In this sense, scientific revolution amounts to a qualitative leap from a relative, particular truth to a broader, more general truth, in other words, to a higher stage on its way to absolute truth.

One of the features of the dialectics of knowledge is that as it constantly expands science in its progressive development it leans on the already accumulated "thought material" (Engels), on collective forms of cognitive activity (language, logical forms, experimental tools, etc.) shaped in the course of historical development.

The continuity of the development of scientific knowledge is ensured by the continuity of the development of society's material culture. It is therefore impossible to understand the development of science in complete isolation from the material-production experience. Undeniably, the basic problems of the concept of scientific revolutions can be solved by an approach under which radical changes in the system of scientific knowledge and its foundations are regarded in the context of radical changes in the entire system of scientific cognition conditioned by both intrascientific and multiform social factors.

The rapid progress of natural science in the period of the current scientific and technological revolution (STR) is marked by a multitude of fundamental discoveries which substantially expand, deepen and specify knowledge about nature. This frequently leads to questions, Will a similar trend in the development of science persist in the future, and Are new revolutionary changes in science possible or Will there come a moment when the basic, the most general laws and regularities of nature are formulated and scientists can only use them in handling specific problems? Some scientists assume that although the progress of natural science will constantly generate new problems the very character of the development of the

natural sciences will, however, inevitably change in the future, that basically new discoveries will be exhausted and no new fundamental theories will make their appearance. In that case, research efforts will be reduced to the application and specification of a once-and-for-all-established system of fundamental theories while scientific growth will represent a purely quantitative accumulation within the framework of a system resting on immutable foundations.

However, the revolutionary development of natural science in the 20th century (as in the previous centuries) also teaches another lesson. It shows that alongside a trend towards the extension of the known laws to an increasing number of properties of natural objects the directly opposite trend fully manifests itself—a trend so deeply analysed by Lenin, namely, the discovery of surprising, “bizarre” phenomena both in new and in long-explored fields of nature. It is precisely for this reason that the study of nature represents an endless process of its increasingly adequate reflection in knowledge at the level of phenomena as well as at the level of regularities.

It can be assumed that in contrast to the previous revolutions, which were enacted in individual sciences, subsequent revolutionary changes will bear a more integral, synthetic character. Amazing, truly revolutionary achievements of physics were marked by a study of “elementary particles”, their properties and interaction. However, far from being a completion of their study, it is only a certain stage in their research, for their interconnections and the possibilities of their combinations are endless. They manifest themselves in one form in an accelerator and in another in a metal alloy; they exhibit an entirely specific quality in a living cell and still more specific in an integral organism.

It is comparatively easy to reduce the multiformity of the world to elementary constituents, but it is far more difficult to comprehend the reasons for, and the sources of, this multiformity of things and phenomena, to make an ascension from the simple to the complex, to uncover the regularities governing the combination of elementary particles into an infinite number of qualitatively distinctive structures. In this sense, the role of physics, including the physics of elementary particles, is far from being exhausted. Chemistry has opened up an unlimited possibility for obtaining various combinations of atoms and new compounds with specific properties. However, man still has a long way to go before he can disclose the essence of their deepest qualitative distinctions and of the laws of their formation. It is still more important to bear this in mind when it comes to more complex systems, including organic structures and living organisms. All these are problems of the future. Their solution will require great revolutionary changes in the entire combination of the sciences of nature.

Materialist philosophy will develop accordingly. Reflecting the universal in the world of phenomena rather than the particular, the specific, philosophical categories are relatively more stable. However, the law of movement from the relative to the absolute truth applies to philosophy as well. Dialectics traversed a long historical path from Heraclitus to Hegel. In reworking Hegelian philosophy along materialist lines, Engels formulated three fundamental laws of dialectics—the law of transition of quantitative changes into qualitative, the law of the unity and conflict of opposites, and the law of the negation of the negation. In developing Marxist philosophy on the basis of new data of science and historical experience, Lenin identified 16 elements of dialectics thus specifying and enriching the principles of the materialist world outlook. Of particular importance are Lenin’s propositions concerning the inexhaustible wealth of interrelations between things and phenomena in the process of their development. According to Lenin, each thing or phenomenon enters in many different as well as in universal relations. Hence, the endless disclosure of new relations, the deepening of knowledge from form to substance, the fusion of analysis and synthesis, the dividing of wholes into parts and the reassembling of these parts into wholes.

Materialist dialectics will undoubtedly continue to develop on the basis of creative interaction between philosophy and all areas of science with due regard for revolutionary changes in science and social life.

#### UNION OF PHILOSOPHY AND NATURAL SCIENCE IN ACTION

At the sources of the realisation of Lenin’s concept of the union of philosophy and natural science stood outstanding Soviet physicists, biologists, chemists, mathematicians and exponents of many other branches of science and technology. Take, for instance, physics, which led the way in the 20th-century revolution in natural science. The names which immediately come to mind here are A. Ioffe, S. Vavilov, and V. Fok. In their scientific endeavour these scientists gave great attention to philosophical and social problems of developing natural science thus confirming the fruitfulness of the methodology of dialectical materialism in disclosing the regularities of nature.

With his keen sense of the new in science, Ioffe stressed the necessity of taking a dialectico-materialist approach to the fundamental scientific discoveries of the 20th century—the theory of relativity and quantum mechanics—criticising those physicists and philosophers who tried to advocate classical and mechanistic concepts of the world at any price. The truth of dialectical materialism, in Ioffe’s opinion, is proved by its heuristic potential, for the principles

of materialist dialectics make it possible to foresee the direction of the development of knowledge.

S. Vavilov vigorously asserted that no philosophy other than dialectical materialism could be made the basis of progressive natural science, progressive physics included. Outlining the history of physics, especially the theory of light, Vavilov disclosed the dialectics of discreteness and indiscreteness, of the corpuscular and wave nature of physical phenomena. It was precisely the dialectical approach that made it possible to comprehend the unity of these opposites and overcome a contradiction which the metaphysically thinking participants in this many-year debate thought insurmountable.

V. Fok developed the well-known concept of the reality of quantum objects and their inherent probabilistic causality—a concept which successfully counters the attempts to interpret quantum mechanical relationships in the spirit of agnosticism.

A similar process, which might be called dialecticisation of their theoretical and methodological foundations, could also be observed in other branches of natural science. A creative assimilation and fruitful application of the concepts of dialectics mark the works of the outstanding Soviet scientist V. Vernadsky. A special observation is required by the situation in biology. Here, too (not without debates), the dialectical approach was asserted—by deeds rather than words—by many foremost Soviet scientists, all conscious exponents of dialectical materialism. Cases in point are furnished by the scientific endeavour of N. Vavilov, I. Schmalhausen, E. Bauer, A. Serebrovsky, to mention but a few. Their contribution to the creation of the dialectico-materialistic foundations of the methodology of biological research is truly invaluable. Incidentally, it awaits an adequate study and deserves to be brought within the reach of the entire scientific community.

In outlining the history of Soviet biology, our ideological opponents not infrequently attempt to present its relationships with dialectics exclusively in negative tones recalling only the philosophical distortions and errors contained in writings by some philosophers and biologists. The result is the allegation that dialectics became “bankrupt” in biology. However, in making this allegation they ignore the incontestable fact that it was precisely leading Soviet scientists who consciously turned to the dialectical method as they brought knowledge to new frontiers thus achieving important results in their theoretical and philosophical generalisations and conclusions. Apart from biology and physics, this applies to Soviet science as a whole.

Now the fundamental methodological and philosophical problems of modern natural science are being elaborated jointly by philosophers and representatives of particular sciences.

Recent years have seen the publication of collections of articles on methodological and socio-philosophical problems of science, such as *Atomic Power Engineering and Scientific and Technological Progress* by A. Alexandrov; *Science and Society* by N. Semyonov; *Science of the Universe: Philosophical Aspects* by V. Ambartsumyan; *Experiment, Theory, Practice* by P. Kapitza; *On the Nature of Matter* by M. Markov; *On the Theory of Relativity* by V. Ginzburg; *The Origin of Life on the Earth* by A. Oparin; *Philosophical Aspects of the Theory of Functional Systems* by P. Anokhin, etc.

Many books appeared in the “Dialectical Materialism and Modern Natural Science” Series, which was completed in 1973. It was succeeded by another series, “Materialist Dialectics—Logic and Methodology of Modern Natural Science”, whose publication continues.

A notable role in the research into the philosophical problems of modern science has been played by theoretical conferences and symposiums, of which more than 100 have been held in the past decade.

Another major indicator of the strengthening of the Leninist union of philosophers and natural scientists is the rapid development of a system of philosophical (methodological) seminars in the Soviet Union.

These seminars have an increasingly obvious trend towards making the discussion of methodological problems organically linked with that of the specific studies included in the basic research plans of respective institutes.

A central council of philosophical (methodological) seminars set up in 1979 supervises research of all fundamental branches of knowledge. By a decision of the Presidium of the USSR Academy of Sciences, a Scientific Council on Philosophical and Social Problems of Science and Technology has been instituted. Philosophers should render all possible support to these major organisational and coordinative efforts in the scientific field.

A specific interest and unquestionable practical significance in the joint endeavour of philosophers and natural scientists attaches to the elaboration of the specific mechanisms of the heuristic impact of materialist dialectics on the progress of scientific-cognitive endeavour, including the methods of synthesis of basically new knowledge about nature. In the past, the analysis of appropriate problems, as a rule, was concentrated on the disclosure of the methodological role of materialist dialectics in the formation of an integral system of scientific and cognitive activity as well as of the structure and genesis of scientific knowledge, whereas now increasing attention is being given to revealing the socio-cultural determination of knowledge as well as to analysing the system of prerequisites for, and the orientations of, scientific research (the style of thinking, the

natural-scientific picture of the world, norms and ideals, the structure and substantiation of theory, methodological principles, etc.).

The steady widening of the use of mathematical methods in natural science, engineering and the social sciences has largely stimulated the discussion and elaboration of methodological and world-view problems of the mathematicisation of present-day scientific, technical and social knowledge. This work proceeded along the lines of both identification of the specific distinctions of the utilisation of the concepts and methods of mathematics in individual branches of natural science, engineering and the social sciences and analysis of some general principles of mathematicisation of scientific knowledge as a whole.

In recent years philosophers and scientists in various fields have intensified their joint efforts to develop such forms and means of generalisation and cognition as symbolic logic, cybernetics, semiotics, simulation, etc. Naturally, this does not lead to any belittling or, still less so, substituting the role of philosophy, of its concepts, categories and laws. After all, neither mathematical, logico-mathematical, cybernetic and other similar tools of scientific knowledge, which, in a sense, acquire a general scientific character, nor any other methods and forms of generalisation, which bear a fairly broad character, can solve such philosophical problems as that of the object and subject, being and thinking, the individual and society, society and nature, etc.

The problem of applying dialectics to scientific cognition, in other words, the dialectical generalisation of its results, remains cardinal to this day. Accordingly, of paramount importance are the principles of dialectical thinking as related to natural science.

#### THE IDEA OF DEVELOPMENT, AND THE STUDY OF THE STRUCTURE OF MATTER

As is known, the idea of development is central to materialist dialectics. Naturally, questions related to the evolution of nature and the emergence of the complex hierarchy of its structural levels attract the extremely broad attention of Soviet natural scientists and philosophers. Modern science has registered such serious advances in the study of the development of matter that it would be justified to say that the idea of evolution has become a norm of scientific thinking in astronomy, astrophysics, evolutionary chemistry, evolutionary geology, biology, and many other sciences.

The idea of the development of matter is organically linked with the concept of its hierarchical structure—of the existence of qualitatively specific structural levels of material organisation. There are no grounds for contrasting the concept of “the level of structural organisation” to that of “the form of the motion of matter”. Both

are necessary in the analysis of modern scientific knowledge reflecting various aspects of methodological analysis.

The concept of structural levels in its turn is historically related to the development of atomistic conceptions and the concept of elementarism. According to dialectical views, the hierarchical structure of the material world necessarily presupposes the existence of relatively independent, qualitatively distinctive levels.

However, the dialectically understood inexhaustibility of matter does not amount to the infinite divisibility and monotonous repetition of an identical hierarchical pattern. It only suggests that matter has an infinite number of properties and possibilities for development.

A major contribution to the handling of the problem of structural levels has been made by the development of physics and biology. Scientists have made a detailed study of questions pertaining to the interrelation between various structural levels. Both one-sided reductionist approaches, as well as opposite standpoints, which absolutised integrality, have been criticised. At the same time, the positive essence of a number of specific applications of the reductionist method and, on the other hand, the fruitfulness of the ideas of integrality and system in scientific cognition have been disclosed.

Apart from the very foundations of science, the question of levels and states of material organisation concerns the vital interests and prospects for the development of mankind. The study of leaplike transitions from one level or state to another leads to the discovery of new sources and forms of energy, new properties of matter. A particularly graphic illustration is furnished by research into the atom and its nucleus and recent astrophysical data on processes which take place in the Universe. Physical chemists, molecular biologists and geneticists have discovered new levels of the study of living matter and an extremely rich potential for biotechnology.

One of the key revolutionary changes in 20th-century natural science is the idea of the evolution of matter at all levels—the idea of the development of the Universe as a whole—which has occupied a firm place in modern natural science.

As a result, a major place has been occupied by the question of development as an attribute, in other words, an inherent property, of matter which is being debated in Soviet philosophical publications. This question has elicited a variety of standpoints. Some scientists hold that an attribute of matter is motion in general rather than development. Support in such cases is usually sought in a statement by Engels, who wrote about the eternal circulation rather than development of matter. Other scientists insist on the attributive character of development, although it assumes the form of manifestation, in other words, the form of motion.



The present author is inclined to believe that the solution to the question of development as an attribute of matter should be based on two considerations. First, the thesis of the attributive character of development does not necessarily have to be understood as the quantitative universality of development. Obviously, the concept of "motion" is quantitatively broader than that of "development". However, it does not follow that development cannot be an attribute of matter. Development can be held to be an attribute of matter as an expression of its general tendency, which does not necessarily manifest itself in any states and in any conditions. Lenin never had the slightest doubt that everything in the world develops (in the above sense). More. Taking precisely universality as a point of departure (the attributiveness of development) Lenin formulated another question: "if *everything* develops, does not that apply also to the most general *concepts* and *categories* of thought? If not, it means that thinking is not connected with being. If it does, it means that there is a dialectics of concepts and a dialectics of cognition which has objective significance."<sup>5</sup>

Second, the concept of development as applied to the material world and to individual material formations has different meanings. In the case of matter in general (due to its qualitative inexhaustibility and infinity) it becomes totally meaningless to speak of its closed circulation as well as of the unidirectional character of development. Matter in general is not an individual formation which exists alongside its specific manifestations. It is a philosophical abstraction which designates the things and phenomena of the surrounding world in their entirety. The development of matter therefore signifies the development (a trend towards development) of all its specific areas and states rather than that of its individual formation.

As is known, matter is the most general philosophical category. Natural science has never dealt with "matter in general". It is concerned with matter at the level to which man has penetrated it. The thesis of development as an attribute of matter should be checked against only those findings which natural science has obtained with respect to matter (at the attained level of cognition). From the general philosophical standpoint, the Universe as described by modern cosmology is, of course, not all matter but only a fragment of the infinitely multiform inexhaustible material world.

How does modern natural science present the development of this segment of the material world? One of the crucial revolutionary changes of 20th-century natural science is the idea of the evolution of matter—an idea which has become organic to its texture. In the 19th century, Engels had no concrete scientific data that would have illustrated the evolution of the Universe as a whole. Modern relativist cosmology and, above all, the theory of the expanding Universe, furnish such material.

However, many features of the evolutionary processes which take place in the Universe have not yet become clear enough. For example, many astronomers assume that Galaxies, stars and planets owe their formation to the compaction of scattered, diffuse matter, whereas others hold that evolutionary processes unfold in the opposite direction, from a dense or superdense state to a less dense one. Obviously, the question of the nature of the substance from which the observed cosmic systems have formed and the mechanisms of these formative processes represent a natural-scientific, namely, astronomical and astrophysical question, which should and will be solved by an analysis of observation data—hopefully, in a not too distant future. Possibly, at some moment one of the rivalling concepts of evolutionary astronomy will win the day, or perhaps the two will combine in some form of synthesis. However, the problem in question has a substantial philosophical aspect. Indeed, for materialist dialectics as a development theory it is of major interest to discover the overall direction of the processes of cosmic evolution: does it always proceed only in one direction, whatever it may be, or is the Universe a scene of dialectical interaction of opposite directions of the evolutionary process?

Once Engels, basing himself on the findings of the natural science of his day, outlined in his *Dialectics of Nature* a spectacular picture of the circulation of matter in the Universe. Naturally, this circulation is not tantamount to a ceaseless repetition or reproduction of identical processes. On the contrary, Engels emphasised, the circulation of matter in the Universe includes endless qualitative transformations of states and forms of matter in motion. Progressive evolution from some primordial state of matter to "its highest creation"—thinking spirit—according to Engels, works its way in the course of interaction between different processes.

Subsequent research indicated that the circulation of matter in the Universe is dialectically interrelated with the irreversibility of the processes of cosmic evolution, the expression of which is the principle of entropy increment. It is logical to assume that the irreversible evolution of the hierarchy of structural levels of the cosmic systems which form our Metagalaxy proceeds from more compact states to less compact ones in some conditions and apparently in the direction of condensation of matter in others. It is precisely the study of the dialectics of these opposite processes in their interrelation that will give an insight, for instance, into the mechanisms of emergence of compact and supercompact states of cosmic objects, which, as is becoming obvious now, represent one of the extremely widespread states of matter in the Universe. Naturally, specific details of these processes will be disclosed by an analysis of factual data.

The idea of structural levels, which are presented as stages of development, is of exceptional importance in biology. The evolution

of biological science shows how progress in the study of the structure and development of matter leads to posing new philosophical problems. For instance, the intensive study of the molecular-genetic level of animate nature made serious changes in the character of biological knowledge and raised the questions of methodological and world-view contacts between biology and physics and of the role of the principle of reduction and the limitations of the methodology of global reductionism. On the other hand, the study of the supra-organismic structural levels has enhanced the role of systems methodology lending primary importance to the necessity of turning to the system of humanities, the knowledge of the laws of social development, neglect of which makes impossible the biological research of ecological problems and the participation of biology in the integral study of man, of the laws governing the evolution of the biosphere, etc.

Recent times have seen another wave of attacks on evolutionary concepts in biology in the capitalist countries, the United States above all. Characteristically, an account of a conference on biology held in Chicago published in the *Science* magazine (No. 21, 1980) was entitled "Evolutionary Theory Under Fire". The conference has exhibited a trend towards assuming that the prevailing concepts of mutations and Darwinian selection are suitable only for explaining what is known as microevolution, i. e., evolution within populations, and that they do not explain macroevolution—the emergence of higher organic systems (genera, families, etc.). It was alleged that palaeontological data point to the prolonged—lasting millions of years—existence of species which subsequently abruptly disappeared being equally abruptly replaced by new ones. In a word, anti-evolutionary concepts in the spirit of Cuvier's theory of cataclysms and even of creationist speculations are becoming reviewed. However, these allegations fall short of furnishing a correct interpretation of the findings of palaeontology and, on the other hand, fail to consider the discoveries of modern genetics concerned with the mechanisms of variability.

This increases the immediacy of the dialectico-materialist concepts of the development and interrelation of structures at different levels of the material world.

The idea of the structural levels and hierarchy of material organisation poses major methodological questions with regard to elementarism and reductionism. It is worth noting that in the past Soviet philosophers concentrated on the critique of various metaphysical views related to some specific concept of elementariness (more often than not, classical atomism). There was a trend towards opposing elementarism to dialectics, or to inexhaustibility, etc.—a trend which at times actually reached the level of the natural philosophical critique of specific natural scientific structures that

exploited the idea of an elementary object. Today, it has become obvious that elementarism as an epistemological guideline itself is not something totally unacceptable methodologically. Of course, some of its variants can be found to be both inadequate and erroneous, but it is precisely the inadequacy and erroneousness of its variants rather than those of elementarism as a general epistemological guideline.

Scientific cognition has always had and will apparently always retain various anti-elementarist trends. Their rational essence consisted and will apparently consist in disclosing weak points of existing concepts of elementariness and in stimulating possible replacements of the forms of elementarism.

The concept of reductionism, which is closely related to elementarism requires special analysis. Previously, philosophers, as a rule, simply identified reductionism with mechanicism. As is known, mechanicism (as a methodological guideline which rejects the qualitative distinctions of complex levels of material organisation compared to the lower ones) was sharply criticised by Engels. Naturally, there can be no rehabilitation of mechanicism in the light of the evolution of 20th-century natural science. On the contrary, this development has finally buried mechanicism as interpreted previously. At the same time, the experience of natural science shows the extensive use of the procedure of reduction of some scientific theories to others. Methodologists argue as to how much some specific reductions are logically substantiated and formally correct. However, the scientific success of such reductions as the creation of quantum chemistry, molecular genetics, etc., is beyond argument.

It all necessitates an adequate appraisal of the doctrine of reductionism. Soviet philosophers categorically reject, for instance, such variants of reductionism as the neo-positivist programme of "unification of scientific knowledge", physicalism in its extreme forms or vulgar biologicistic theories of man adopted in modern bourgeois philosophy. But, as in the case of elementarism, a philosopher should distinguish between specific versions of reductionism (which can be found to be erroneous or metaphysically one-sided), on the one hand, and reductionism as a general epistemological guideline and generalisation of the reduction method as a crucial tool of modern scientific knowledge. Adequately, i. e., dialectically, understood, the reduction method does not reject the qualitative distinctiveness of the complex levels of a structural organisation. On the contrary, epistemologically, it orients philosophers to a theoretical explanation of the qualitative distinctiveness of material formations on the basis of the fundamental laws governing other levels of material organisations. The limitations of reductionism are overcome by dialectics, which registers the aspects of integrality and qualitative specificity of each structural level as well as the necessity of isolation of elements specific to each class of

systems. Such a stand connects the cognitive programme with a search for specific elementary structures included in integrality rather than the concept of the community or identity of similar theoretical and ontological structures. On this basis continues to develop Engels' concept of the forms of motion of matter, which was directed against two metaphysically one-sided approaches: the mechanistic negation of the qualitative distinctiveness of higher levels of material organisation and the metaphysical absolutisation of this distinctiveness. The progress of modern natural science more and more deeply illustrates the methodological fruitfulness of this dialectico-materialistic concept of development. Particular importance attaches to its application in the analysis of "thinking matter" and psychic processes as the higher manifestation of material evolution.

#### PHILOSOPHY AND PROBLEMS OF KNOWLEDGE INTEGRATION

Marxist philosophy proceeds from the principle of material unity of the world, which includes the infinite multiformity of processes and phenomena in its continuous development. Objectively, this gives rise to two tendencies in human knowledge: first, a tendency towards reflecting a single picture of the world, towards presenting the world as an integral whole; second, a tendency towards grasping more deeply and concretely the regularities and qualitative distinctions of different structures and systems, of various forms of the motion of matter. The former expresses processes of synthesis or integration of knowledge, the latter—processes of specialisation and differentiation.

Interrelation between integration and differentiation is of a truly dialectical character because these opposites condition and organically complement each other. For instance, the differentiation of knowledge, which manifests itself in the rise of an increasing number of intermediate sciences, actually bears an integrative character because it erases the boundaries between these sciences, creates common objects of study and leads to new forms of integrated approaches.

At the same time, the contradiction between integration and differentiation continues because these processes have different orientation, different nature and different foundations. Without the ordering of the division of labour in science as a *sine qua non* of the differentiation of knowledge there is no advancing towards an ever more exact and refined study of the structure of matter, its various systemic formations and its specific mechanisms of evolution. This exact knowledge develops by the integration of methods of research without, however, erasing the difference between the programmes and aims of research and the results obtained in the various branches of natural science.

Marxist-Leninist philosophy emphasises that the formation and development of a single science bring about the increasing interpenetration of the methodological and world-view foundations of the historically shaped departments of knowledge rather than their elimination.

The integration of sciences is necessitated by the requirements of the study of the single world process as the law-governed motion of matter rather than by any transient circumstances. A single scientific world outlook represents the totality of modern data on the philosophically interpreted fragments of objective reality which form the object of study for particular sciences rather than the sum total of conceptions about the world, specific to each science. The generalisation of individual fragments of knowledge—bringing them together into an integral picture of the world—represents the main task of theoretical thinking. This accentuates the significance of Marxist-Leninist philosophy in integrative processes, including the formation of a world outlook. Each fundamental science performs its own inherent integrative functions. Their vivid manifestations are observable, for instance, in the evolution of interdisciplinary studies. However, the universal result of generalisation—the overall concept of the world—is a product of philosophy's interaction with all areas of knowledge. At the same time, the methodological, world-view orientation of science brings it closer to social reality, to actual life.

Lenin approached integrative processes in science not only as purely theoretico-cognitive and methodological problems of the systemic character of scientific knowledge, but also as the problem of social designation of science, of its interaction with other social institutions and spheres of social life, as a problem of constructive social, moral and world-view stand of a scientist. Lenin gave a theoretical substantiation as well as a remarkable model of practical organisation of integral studies of crucial national economic and social problems. Incidentally, Lenin drew leading representatives of the natural, technical and social science into the work of elaborating the epoch-making plan of Russia's electrification.

The specific features of modern production, the general problems of the current scientific and technological revolution and the requirements of social progress in the Soviet Union dictate the necessity of integrating the achievements of the social, natural and technical as well as related agricultural and medical sciences.

For instance, the analysis of the distinctions of the development of the productive forces in conditions of the scientific and technological revolution makes it imperative to study not only the physico-chemical and technological properties of implements of labour and materials processed, but also man as the subject of production, the optimum coordination of his physical, psychic and intellectual potentialities, aesthetic tastes and other social qualities with the properties of the

present—and future—engineering systems. The resulting new scientific disciplines, such as ergonomics, industrial aesthetics, applied linguistics, engineering psychology, economic cybernetics, integrate theoretical and experimental means and methods of the social, natural and technical sciences.

In socialist society, the interaction of sciences is related to raising production efficiency and improving the rational utilisation of new industrial equipment, as well as to creating the best conditions for allround development of the individual, for relieving man of arduous monotonous labour. The integrated problem of man increasingly reveals its practical and theoretical immediacy.

Interaction between these sciences, which have become so different qualitatively in the course of history, presents a serious philosophical problem. The traditional dissociation of these sciences is being gradually overcome in practice under the pressure of social progress and the necessity of handling the ecological, demographic, energy, raw-materials and other global problems of our time. The purposeful scientific direction of the general tendency towards all major areas of knowledge being drawn closer together requires the continued development of the basic provisions of Marxism with regard to the social designation of science and its value for man and humankind—not in the primitive, utilitarian sense, but in keeping with the deep concept of the essence of man and his requirements and aspirations substantiated by the Marxist-Leninist philosophy of history. In other words, the problem of man is becoming not only the main stimulus for a theoretical understanding of the interconnection between the natural, social and technical sciences, but also a major element in the philosophical substantiation of this interconnection in the ever more distinct identification of the range of methodological and world-view problems which cannot be simply summed up from the different areas of knowledge but should reflect precisely the synthesising trends of their progressing interaction.

The biological and social factors in the development of man have been the object of fruitful scientific discussions, whose materials are broadly represented in Soviet publications of recent years.

Marxism categorically rejects the biological approach to social phenomena because it is precisely social regularities that fully determine the “behaviour” of the classes, nations and all social groups in general. However, this does not rule out the need to explore the correlation of the biological and the social in man as an individual. The presence of biological structures and life processes in the human organism constitutes a prerequisite for the existence of the suprabiological socio-cultural forms of human life-activity. Undoubtedly, there can be no return to any forms of Social-Darwinism or any kind of biologism in general. The proposition that man is a social being, that social conditions determine human development

and behaviour has become basic to Soviet philosophers. However, they are opposed to the oversimplified concept that human behaviour has no natural determinants. As a member of society, man is a social being, but as part of nature he is a biological being. It is precisely this that serves as an objective reason for the biological sciences to increasingly study the problems of man.

The synthesis of natural-scientific and humanitarian knowledge in the integrated problem of man represents one of the main directions of the present-day integration of knowledge. Naturally, it is not a smooth process. It involves various assessments of the role of biological knowledge in the study of man. At this stage it is difficult to attain consensus, but striving for the truth presupposes a serious analysis of the opposite views. This applies both to the discussion of the problem among fellow-Marxists and to the critique of our ideological adversaries. For instance, Soviet ethologists and philosophers specialising in the philosophical problems of biology are to analyse and critically assess the trend which its founders have called sociobiology and which is rapidly developing abroad. Many rash conclusions are contained in the concepts suggested by proponents of this trend which has as its aim the study of the biological basis of human behaviour. Our critique will be effective if it discloses the internal contradictions of these concepts, the relationship between their empirical and theoretical propositions, the content of their theoretical prerequisites and world-view conclusions.

At present an increasing number of sciences are more and more successfully beginning to probe into the problem of man—the most complex but also the most stirring of all scientific problems. Many scientists insist on creating a single science of man. The present author assumes that the actual situation in this field makes it premature to raise this question. An integrated and basically general scientific problem, man is studied by a whole complex of sciences (anthropology, physiology, psychology, sociology, aesthetics, ethics, ethnography, etc.). The comprehensive study of man should be so organised as to make possible a businesslike mutually complementary cooperation between representatives of various branches of science. Special attention should be given to the study of man's labour, or productive activity—the basis of social progress. This is all the more important since many new complex problems have been raised by the scientific and technological revolution.

#### MAN AND NATURE IN THE CONDITIONS OF THE SCIENTIFIC AND TECHNOLOGICAL REVOLUTION

One of the characteristics of the STR is the strengthening of relationships between science, technology and production as well as between fundamental and applied research. These relationships,

which are becoming increasingly intensive and multiform, considerably influence the development of production as well as of science itself. On the one hand, the productive forces of modern society create an unprecedented potential for the advancement of science, for the formation and expansion of basically new lines of research supported by experimental and computer facilities. On the other hand, according to an observation of Academician B. Paton, in the epoch of the STR practice increasingly is the realisation of creative programmes while theory not infrequently is a "directive" for appropriate practical actions, a generalisation of schemes or algorithms of practical activity. Thus, science exercises an ever greater influence on the development of socio-historical practice.

There is a substantial change in the character of man's productive activity. Mstislav Keldysh justly saw one of the distinctive features of the STR in the fact that in the past the transition from manual work to machine production ushered in a new era, when the machine replaced man's muscle and lightened physical labour, whereas in our time new-type machines can perform complex exhausting computational and some other mental operations, thus facilitating mental work and raising its productivity. Systems of machines make it possible to automate the production process, whereas computers make it possible to automate production control. This makes it binding on philosophers to conceptualise on a broader plane, precisely from the standpoint of materialist dialectics, the correlation between the most recent technical equipment and man's intellectual activity, including the problem of artificial intellect.

All this, naturally, affects science itself, which is given fresh impetus in the course of the STR, which is a radical revolution not only in individual scientific disciplines, but also in whole complexes of sciences. Furthermore, a notable distinction of its current stage is precisely the formation of interdisciplinary complexes of scientific knowledge which include social-scientific, natural-scientific and technical disciplines called upon to form the theoretical basis for the planning, organisation and performance of activity in the various practical fields.

A Marxist analysis of the ecological problem does more than emphasise its natural scientific and technical aspects. It reveals its entire spectrum of questions, including ethical-humanistic, thus giving the interpretation of man-nature relations a truly comprehensive character.

Research into such global problems as energy and food resources is proceeding in a similar direction. In these problems, too, our scientists are working on substantiated scientific, technical and socio-philosophical interpretations.

The nature-society relationship is no longer confined to our planet. This is the result of the development of cosmonautics, the

creation of cosmic instruments of research and the exploration of outer space and the Earth. In this field the pioneering efforts were made by our country, which launched the first man-made body outside our planet in October 1957.

What is the relationship of modern cosmonautics to other global problems of our time? Not infrequently, these problems, including the ecological one, are divorced from space exploration. This is a wrong approach because cosmonautics is an active helper in handling macroeconomic problems, while the effect of some of its branches, for instance, satellite-assisted meteorology and communication or the study of the Earth's surface, more than compensates for the expenditures on the development and operation of appropriate apparatus. That was precisely the reason why the 26th CPSU Congress devoted special attention to the need to continue the development of the space orientation in the nature-society interaction and utilise space facilities in the interests of the progress of science, technology and the national economy.

However the successes of existing socialism in optimising the interrelation between man and the environment and rationalising the use of natural resources in no way mean that the handling of ecological problems presents no difficulties. Such difficulties exist and the CPSU with all objectivity discloses their sources, thus fostering a humanistic attitude to nature in all members of socialist society. The moulding of the harmonious personality is impossible outside of its ecological orientation.

Of extremely great importance in the analysis of modern ecological problems is the prognostic element. Many of the bourgeois researchers ("ecological pessimists") offer a fairly negative assessment of the prospects of man-nature relationship, assuming that civilisation cannot cope with adverse ecological trends which are leading the world to the brink of "ecological catastrophe".

Being in the blinkers of metaphysical thinking, even conscientious Western researchers, noticing the urgency of the problems stemming from the prevailing situation, failed to take a required constructive approach. Unaware of the dialectics of objective processes, they see in the STR only a source of acute social conflicts, thus underestimating its inherent potential for a transition from the present type of development of the productive forces to a qualitatively new type of growth of social production and, on this basis, to those profound social changes which are demanded by the revolution in the productive forces.

Metaphysical "orientations" ignore the potential for the development of nature, especially as a result of reasonable human endeavour and, what is most important, the potential for the development of society and man himself, who is capable of improving the natural environment and exploiting ever new of its powers and properties.

## Science, Technology and Humanism

VLADIMIR ENGELGARDT

**From the Editors:** The article is based on a report submitted by the author, a well-known biochemist and one of the oldest Soviet scientists. It was presented at the All-Union conference on the philosophical problems of modern natural science held in April 1981 in Moscow.

Humanists see the world we live in in terms of the significance we give to the destinies, needs, and predestination of mankind, as a biological genus in its various social communities and as an individual or personality.

Owing to the rapid advance of technology, the immediate material world in which we live has practically become the product of man's own activity. That is, he has transformed the surrounding world, using modern technology. One of the most important aspects of modern humanism is the need for a proper balancing of man's physical and, speaking more broadly, material, social and intellectual life.

One of the top-priority problems with which mankind is preoccupied is its interrelations with the environment. While acknowledging the importance of the external environment, it would still be wrong to underestimate the immense significance of the internal, socially determined spiritual environment of the human personality. This problem is indeed of global significance. It has a bearing on the intellectual and emotional perception of man as an individual. This involves all forms of his relations with members of his own species. It begins with (and progresses through) the family, and all the stages of the development of human communities and all the gradations of social levels—classes, nations, states, countries, and ending with mankind as a whole. The influence of humanism is immense. It is concerned with the microcosm of a separate individual as well as the whole population of the planet.

It is precisely rational changes in the environment and society that give the clue to the solution of the problems confronting mankind at the present stage. The powerful potential of the STR becomes fully disclosed and can be realised only when its achievements become organically fused with the advantages of socialism.

It is necessary to evolve a prognostic strategy of ecological development on the basis of the Marxist-Leninist philosophico-sociological concept of nature-society interaction with the use of global modelling and other modern scientific techniques.

It stands to reason that the solution of the ecological problem, just as of all problems of man and humankind, depends on the preservation of world peace, on the success of the struggle to avert nuclear disaster. The 26th Congress of the CPSU specified and developed the Party's Programme of Peace charted at its previous congresses. In the process of its implementation a major role is assigned to science and scientists, especially in demonstrating the fatal hazards of nuclear war and the vital necessity of preventing nuclear catastrophe. The active efforts to safeguard peace are a graphic illustration of the humanistic orientation of science under socialism.

The acute ideological struggle on the world arena tends to enhance the importance of the world-view function of natural science, just as of all areas of scientific knowledge. Science cannot remain neutral in the struggle of the forces of progress against those of reaction, in the struggle of reason against mysticism, chauvinism and aggression. The scientist's active civic stand is organically linked with his progressive scientific world outlook. Of particular importance to the propaganda of such a world outlook is the union of philosophy and natural science.

Such are the basic philosophical problems of modern natural science. Obviously, the success of the efforts of Soviet philosophers and scientists substantially depends on how deeply and creatively they apply the Leninist principles of philosophical analysis of natural science and develop on this basis dialectics, which Lenin called the "life blood" of Marxism. This is the only fruitful basis for a successful advance in the scientific study and philosophical generalisation of the laws of nature in the interests of the individual and society following the path of communism.

### NOTES

<sup>1</sup> L. I. Brezhnev, *Report of the Central Committee of the CPSU to the 26th Congress of the Communist Party of the Soviet Union and the Immediate Tasks of the Party in Home and Foreign Policy*, Moscow, 1981, p. 77.

<sup>2</sup> V. I. Lenin, *Collected Works*, Moscow, Vol. 14, p. 262.

<sup>3</sup> *Ibid.*, p. 159.

<sup>4</sup> *Ibid.*, p. 117.

<sup>5</sup> *Ibid.*, Vol. 38, p. 256.

In the title of this article, the term "humanism" stands next to science and technology. This triad, I believe, constitutes the outline of our world today. I do not propose to discuss the role played by various kinds of humanism in the formation of the contemporary world and the prospects for the future. I shall only touch on several aspects of the interrelation between the members of this triad. I would also like to explore the social responsibilities of the scientist. This question also lies in the sphere of interrelations between science and humanism.

Firstly, I would like to point out the special attention now paid to the so-called Leonardo da Vinci phenomenon. Indeed, in this giant of culture who was one of the major figures of the Renaissance, we have a striking combination of three aspects of personality corresponding to the three constituents of the triad mentioned above. Leonardo was a great representative of art—the principal constituent of humanism; he was at the same time a major scientist of his time; and finally, he was an outstanding technologist. He was capable of solving complicated technological tasks. But his creative imagination outstripped the real opportunities of the times by centuries.

In the materials available to me I did not find any sign of significant interest displayed by Leonardo for social problems. These are, generally speaking, an important part of the overall structure of humanism. There are no grounds for ascribing to him any interest in sociological problems despite his numerous gifts and far-reaching aspirations. Yet Leonardo expressed valuable thoughts in the field of introspective humanism, if one may be permitted the expression, which touched the inner mechanisms of an artist's perception of the world. Leonardo offers a profound analysis of the cognitive activity of the human mind. He points out the difference in thinking between simple or passive, mirror-like reflection, and the interpretation of the original reflection.

Inevitably, one is struck by the common elements (although there are differences as well) between the views of Leonardo and those of Lenin. Lenin developed certain ideas in his philosophical works on the theory of reflection as the basis of relations between man and the world.

Stefan Zweig wrote *Starry Hours of Mankind*.<sup>1</sup> It consisted of artistic sketches from the life of individuals describing brief events which left deep impressions for long periods that followed or even signified a turning point in whole epochs. Here figured the "world minute" of the battle of Waterloo; the writing of *La Marseillaise* in a single night by an unknown officer; the appearance of the first conquistador, Vasco Nuñez de Balboa, on the Pacific Coast; Lenin's appearance at the Finland Railway Station in 1917 after his return from emigration. Developing Zweig's idea, we would be justified in saying that the life and activities of certain great men cannot be

regarded as a short "starry hour" but as "mankind's starry epoch". For example, such figures as Leonardo and Lenin have to a considerable extent determined the direction and the development of civilisation.

We live in an epoch of scientific and technological revolution, in one which is fraught with crises. These continually shake the Western world, spontaneously developing situations that last a long time and require extraordinary measures to overcome.

Mankind has long known natural crises: earthquakes and floods, drought and famine, epidemics. But those were local in character and limited in time produced by the forces of nature. Man was their victim rather than cause. As for the crises mentioned above, they are the result of the activities of man himself—they are anthropogenic crises, so to speak. They are clearly social in nature and, correspondingly, manifest themselves in different ways in different social systems. Certain features during crisis situations may be generated by the difficulties of growth. However, these crises are also the result of man's interaction with his habitat, which are uncontrolled in the capitalist world. We all know of the raw-material and energy crisis, the demographic crisis, the nutrition crisis, the ecological crisis, and so on. These are all material crises. Apart from these, we will now discuss the crises concerned with man's spiritual world. We hear of the crisis of information. Information is hurled at us in such great quantities that we are unable to analyse it all. This leaves the possibility wide open for organised misinformation which is aimed at influencing man's environment and behaviour.

Humanitarians pay more and more attention to what the Western scientists sometimes call "identity crisis". This is the loss of any conception of man's place in the modern continually changing society, a crisis of personal self-value. I shall later recur to this specific aspect of the crisis, which some see as a global one. We face a real threat of losing sight of what is ultimately of paramount importance—man and his personality. In our general discussions of global problems we will include mankind as a whole.

At present, attention is focused on the external material environment. Care is taken to preserve it and avoid polluting it. However, attention to the "inner world" of the individual is constantly needed. One of the deeper-lying aspects is for man to find liberation from the doom threatening him. In our search for the most effective forms of activity, it is natural to concentrate on problems involving the broadest masses of the population, while also taking into account the individual and his spiritual world.

Typical of the modern epoch is the emergence of crises whose consequences are reflected in the destinies of great masses of the population and are at times fraught with global dangers. This

situation imposes a particular responsibility on science as a factor in the origin of such situations, and on the scientists.

One can often hear accusations levelled at science and, consequently, at scientists. This is only natural, since some crises emerge as a result of modern technology. The progress of technology, its development and new forms are based on the achievements of science. Science has become one of the productive forces of not only national economies but of the world economy. It has essentially become perhaps the most powerful of these forces. It is a universal source of advancement which is the basis of development and technological progress.

The causes of modern crises are rooted in the imperfections of various economic and social structures. In a great many cases, it may be due to the qualitative and quantitative ambiguity of the results of technological progress. This opens up possibilities both for rational use of technological achievements and their abuse which may prove detrimental to man. Examples of this can be found in many fields (cf. atomic industry and the threat of radiation; the uncontrollable increase in the use of natural resources; the growing power of the mass media; the uncontrollable flow of drugs, often with little-known side-effects, etc.). Bad side-effects may accompany the achievements and successes of science. We are therefore compelled to acknowledge that science bears a certain responsibility for the emerging conditions. It inevitably follows that special responsibility falls on the creators of science, the scientists, whose work may open the door to negative consequences.

The scientist's responsibility towards society has long attracted considerable attention. It is complicated and many-sided. It consists of a great number of factors and is closely interwoven with the wider problem of ethics. This particular aspect we are not going to investigate here. In his work, the scientist naturally bears a responsibility to humanity, if one is permitted to put it like that. He is responsible for the high quality of his scientific work, he is expected to be irreproachably strict in the analysis of his data, scrupulous in the use of his colleagues' work, and fully justified in the conclusions he draws. These are the basic elements in the scientist's responsibility, his personal ethics, so to say. The scientist's responsibilities become much wider as soon as he comes up against the question of forms, results, and the use of his work through the medium of technology and economy. It would be naive to think that the actions or behaviour of an individual scientist may have an effect on the emergence or course of a certain crisis. What we have in mind here is quite different—the voice of the community of scientists through their professional position.

An example of collective action taken by scientists which is already quite well known, is the voluntarily agreed-upon moratorium on

research into a new branch of science—gene engineering. Ill-conceived methods or carelessness, resulting in an accidental escape of dangerous, potentially pathogenic material from the laboratory might have major consequences. It includes the possibility that a new and previously unknown epidemic could be unleashed which medicine has no means to fight. The consequences might indeed be global in nature. This question was discussed at a special scientific conference held at Asilomar (USA), in which Soviet representatives took part. The debate ended in a decision declaring a moratorium, that is, research in this field was to stop until carefully devised precautionary measures could be worked out effectively, thus ruling out the possibility of danger.

The adherents to the idea of "freedom in science" opposed this measure, but common sense won in the end, and now the necessary working procedure has been adopted in many countries. Thus concerted action by scientists averted a danger that might have developed into a crisis. The Asilomar moratorium may rightly be regarded as the prototype of action taken by scientists who realise their responsibility and want to face up to it.

The problem of the scientist's responsibility arises clearly and distinctly, when he runs into the *pro* or *contra* dilemma. This was the case, for instance, in the medical field at the beginning of the century, when Ehrlich discovered the first effective drug against syphilis—Ehrlich-Hata 606 (L-10). Medical science and practice were guided, at that time, by one principle, which still figures in the Hippocratic Oath. This principle, which has become indisputable law, says: "First of all, thou shalt not hurt"—*Primum ne noceas*. Ehrlich had the courage to proclaim and defend a different principle: "First of all, thou shalt be of use"—*Primum ut proficeas*. These principles directly appeal to the scientist's responsibility, to his conscience. Clearly their significance goes far beyond the framework of medical science, as they have a very broad general meaning. These problems arise continually, but there can be no valid formula. Each time the scientist will have to weigh the pros and cons himself, and finally take the responsibility for his actions.

In the case of Ehrlich the scientist's responsibility was extraordinarily high, one may say gigantic. On the one side was a terrible disease, spread throughout the world. On the other, a promising, but not fully investigated drug with the danger of grave side-effects. But Ehrlich's judgement led to the triumph of the *Primum ut proficeas* principle. A grave disease was defeated despite certain risks of causing harm.

Undoubtedly scientists in the future will still have to appeal to their own conscience on numerous occasions when global crises and problems arise. They will appeal to the sense of responsibility in trying to find a correct way of overcoming various threats as they



emerge. It is, of course, the task of the public conscience of the scientists of the world, a matter of their common responsibility, to combat in every way the causes of harmful and pernicious consequences; to direct scientific research towards setting right the harm which science itself could cause through failure to weigh and take into account the possible consequences. They will thereby become involved in the emergence of certain global problems. For this reason, the unusual form of reaction, now current abroad, to the difficult decisions that a responsible scientist has to make, should be regarded as sheer capitulation. This reaction is expressed in the slogans of "counter-science" and "counter-culture", and appeals for a halt to the advancement of scientific research.

It should be admitted that scientists are, to a certain extent, to blame for the sores eating away the flesh of modern Western society. Their guilt lies in being uninvolved and in their desire to escape responsibility. Their attitude is one of "non-interference" in the affairs of the world community of scientists. Many of us, especially people of the older generation, remember the deplorable results brought about by the ill-fated principle of non-interference in international politics, which in the days of Munich led to the holocaust of the Second World War. It carries bad seeds, which could become the norm in a scientist's behaviour.

The movement for scientists' collective responsibility should be acclaimed in every way. At present, attention is focused on broad organisations such as the World Federation of Scientific Workers and their professional unions in separate countries. The emergence of organisations with a clearly expressed purpose, such as the British Society for Social Responsibility of Scientists (BSSRS), and others is a great step forward. We regard this movement as significant. In it scientists show awareness of their responsibility at a time of major international problems pertaining to different aspects of modern society. It would be of great import if an authoritative international committee of scientists were to be set up, as suggested at the 26th Congress of the CPSU. It would serve to inform the world about the realities of a nuclear war.

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But now to return to the triad—science, technology, humanism which I mentioned above and which is the title of my article. However significant and independent each term in it is, it is very important to focus on their interrelations, the inner connections linking them up in a unified whole in our conception of the modern world.

The interrelation of science and technology is so transparent that there is no need to dwell on it at any length. All the modern

achievements of technology are the result of application and utilisation of the fundamental discoveries made in science. Put succinctly, this idea can be formulated as follows: human reason is the highest level of attainment in our Universe. It is the 'most powerful of all forces that we know. It masters all the forces of nature, and calls to life some others (e. g., atomic and thermonuclear energy) which our environment was unaware of. The immensity of this force is expressed in Einstein's idea that the greatest mystery is the fact that our world is knowable. This mystery becomes a reality through the agency of our reason, whose cognitive potential in our view knows no limits. Science is a form of action of this force, and technology serves as an instrument or implement by which this force is used for mankind's needs.

The relationship between science and technology is ambivalent. Not only does technology feed on the fruits of science—it poses new tasks for it and arms it with instruments. These extend the limits of our cognition to a degree that is hard to imagine: new principles in telescopes provide information on objects and events in the regions of our Universe millions and even milliards of light years away, and at the other end of the scale, methods have been discovered for localising and making visible the position of atoms in a molecule of matter.

The interrelation between technology and humanism can be considered in two aspects—positive and negative. The positive influence of humanism on technology is slight or nonexistent. Technology develops according to its own laws, and humanistic ideals can hardly play any considerable role in the formation of these ideals. We should probably take into account what is known as technical aesthetics. In technical production it may emerge as the desire to conform to the principles of harmony of forms when creating objects, beginning with manual tools and articles of everyday use and finding its fullest expression in architecture where the solution of technical problems is most closely linked with the requirements of applied art.

The positive contribution of technology to the humanitarian sphere is enormous, particularly in the quantitative aspects. It forms the basis of all those things which form the conditions of man's material existence. It stretches along the entire route of evolution, from the first fire lit by Neanderthal man to the countless benefits permeating the life of the modern city dweller, including comfort, food, the decreasing role of the lower, physical forms of labour, transportation, information, and so on. We must not forget, however, that qualitatively this is only one side of man's existence, what may be designated by a term borrowed from physiology "vegetative life". This probably exhausts the positive aspect of the interaction between technology and humanism. We are compelled to state, with a feeling

of bitterness, that the negative aspects of the effect of technology on the life of modern man is at times quite tangible. It even calls into question the very continued existence of the human population on this planet.

There is a growing tendency towards urbanisation. The phenomena of urbanism and the problems involved are, to a considerable extent, sociological in origin, but they are also part of technological progress. We often deal with phenomena that are in direct antagonism with the basic tasks of humanism and can thus be characterised as dehumanisation. We shall later tackle one of the manifestations of this tendency.

Of decisive significance is the fact that in the capitalist countries, the dominant trend in modern industrial technology is linked with the production of weapons of mass destruction. The final stage in the dehumanising effect of technology is the industry and technology of weapons of mass destruction. It comes to the fore in the arms race led and spiralled first and foremost by the USA. It is well known that the stocks of nuclear weapons accumulated at this time which are still growing rapidly, are quite sufficient to annihilate the entire population of the Earth a hundred times over. The first nuclear explosions will inevitably spark off a nuclear war in the chain reaction pattern. Any sober-minded person will understand that that will be an act of suicide for humanity and the acme of antihumanism. When mankind faces the choice between the continued existence of the human species and being annihilated by thousands of atomic and thermonuclear bombs, the choice should be clear. We should be concerned with making man's life better and richer spiritually. We all appeal to the highest force that exists on our planet—the human reason. Individual reasoning is not enough, it has to be mankind's collective reason: Bethink yourself!

The problems of humanism disappear when human life itself disappears. Our task is to push this thought aside and believe in the strength of human reason. We must think of man as he was thought of in the times of Dante and Leonardo da Vinci and, as we firmly hope, future generations will think of him.

The relationship between science and humanism attracts considerable attention. It has been the subject of many international meetings and discussions—e. g., the symposium “Civilisation and Science—in Conflict or Collaboration?”<sup>2</sup> convened in 1972 by a scientific and social organisation, the CIBA Foundation. The central question considered there was the effect of science on the quality of life, on labour and leisure, on environment, on human values. These are all problems pertaining to the field of humanism (designated in this case as “civilisation”, which is in my view terminologically unfortunate and incorrect).

C.P. Snow's conception of “two cultures”<sup>3</sup> deals essentially with the same problem—the existence of two languages alien to each other. One of them is employed by men of science and the other, by representatives of the humanitarian mode of thinking, first of all by writers of fiction being the most important kind of art. This problem caused lively debate. The desire to substantiate the principles of scientific humanism may be regarded as an attempt to find a way out of this dilemma. Regrettably, the concept of scientific humanism is still little developed. Here one could, however, find something of a common language, a kind of new Esperanto. Closer contacts could be established between the intellectual kingdom of science and man's spiritual world which would find an expression in humanism.

The generally accepted view is that the principal criterion for science in its conclusions and results, should be objectivity. It is apparently accepted that there is no place here for the subjective element pertaining to the subject of the scientific process, to the scientist himself as an individual link in the stream of scientific creativity which is ultimately always collective.

However, because science is the result of the activity of our mind, it enriches it with new knowledge at the same time. And the enrichment of the treasury of human knowledge is one of the factors in the development of mankind, in its collective intellectual progress. Science therefore plays an important role in the formation of the aggregate set of values constituting the concept of humanism itself. It is probably correct to say that science enriches our internal world by affecting, first of all, the intellectual world—the laws of nature that govern the external material world. As for art, it mostly affects our emotional world, as it appeals to our senses.

In conclusion I would like to go back to the negative interaction between technology and humanism, expressed in the “crisis of identity” mentioned above. That is a spiritual crisis typical of the giant cities of the Western world with their sharp stratification into the have and have-nots, into the rich and the hapless. The identity problem has now assumed global proportions. An indication of this is, for instance, “Toward Global Identity”, the title of one of the major articles in the large collection of papers *On the Creation of a Just World Order*<sup>4</sup> published by the Club of Rome. What is meant by the term “identity”? Oversimplifying it, one may say that it is a question of man's conception of his own value in relation to the social environment. A correct conception of identity solves the acute problem of the interrelation between man and society. In other words, what matters is man's conception of his place in the world. He is surrounded by men and women who are like him yet different; it is a conception of one's significance, value, and ultimately, of the meaning of one's existence; that is the problem of interrelation between unity and multiplicity, the individual and the mass.

Urbanisation is the dominant modern tendency in the development of social life in the industrialised Western countries. It is one of the principal sources in the development of the identity crisis. At the beginning of the century, the Belgian poet Verhaeren loudly denounced the octopus city (*Les villes tentaculaires*) which grasps man with its cruel tentacles. In this environment man is lost, he is engulfed and dissolved by the faceless mob. The city saps his strength and his sense of his own value.

In analysing the problem of identity, modern authors single out two kinds of tendencies—positive and negative; the latter kind is aggression, violence, depersonalisation, etc., which can lead to the identity crisis.

The crisis of identity now assumes a special significance. Other types of crises—the energy crisis, raw-materials crisis, etc.—affect man through economy, social order, production, etc., while the crisis of identity involves the personality, its inner world, and its system of values. It is clear therefore that, despite its seemingly ephemeral nature, this crisis must not be underestimated. It deserves special attention.

In the West, one of the principal sources of the identity crisis lies in the dominant tendency towards urbanisation. For instance, the unfortunate rural dweller, deprived of the most elementary comforts and hygiene, sees urbanisation as a way of sharing in the benefits of modern civilisation. The city, with its glamour and wealth, attracts the rural dweller. But in the majority of cases there is bitter disappointment in store. Coming to “the octopus city”, he is doomed to a miserable existence in the slums and acutely feels himself a depersonalised, infinitesimal particle of the mass around him. What awaits him is life in the slums. This is not much better than life in a village hut. In the city he struggles to survive against cruel competition and the threat of unemployment, which often prove to be beyond his strength.

No one will negate the advantages and merits of urbanisation in general. However, urbanisation taken to its limits becomes its own opposite. Instead of the expected, but illusory material benefits, comes spiritual impoverishment, the loss of one’s own self in the maelstrom of innumerable crowds. Instead of a hand reaching out to him with all the benefits of civilisation, progress, and comfort, man encounters the cold implacable tentacles of the octopus city. Depersonalisation, the primary concomitant of urbanism, is also a direct source of the loss of identity.

A monstrous illustration of the crisis of identity was the widely reported tragedy in Johnstown, Guyana, which carried away almost a thousand lives. History has known group suicide in ancient Egypt, in early Christian times and in the Middle Ages. But there has been nothing even remotely like the size of the Johnstown tragedy. How is

one to picture the nights that became the last ones in the lives of almost a thousand people? They were driven by the modern capitalist society into a *cul de sac*, trying to shake off the grip of a doomed life, lost and spiritually impoverished in wealthy kingdom, of the yellow devil—gold!

The Guyanan people were deprived of the goal of their existence, their self-consciousness, their “identity code”. It will remain an indelible spot in the conscience and responsibility of those people who helped form that structure of society.

The crisis of identity is basically caused by social factors. One of the strongest of these factors is, of course, steadily growing unemployment in the Western industrialised countries. This gives rise to a sense of being unwanted, the feelings of being superfluous. This in turn leads to the complex of “negative identity” which results in loss of one’s aim in life—spiritual vacuity. That is dehumanisation, and an important task of humanism is to overcome it.

In sharp contrast are the aspirations underlying the structure of society of existing socialism. Here, solicitude of self-expression, the existence of a clear goal and a positive attitude towards the individual—all this is made the basis of the education and moulding of the rising generation. Moreover it is also the aim for every able-bodied and active member of the population.

In speaking to the youth of this country at the celebration of the 60th Anniversary of the All-Union Leninist Young Communist League, Leonid Brezhnev said: “Every day now we cover as much ground as we did in weeks and even months in the past. This sets in relief the significance of everything we are doing and the responsibility that we Communists and Komsomol members have assumed of our own volition, because of our convictions.”<sup>5</sup> This feeling of responsibility leaves no place for spiritual vacuity, making life full of content, serving as a basis for a positive and full-fledged personality and identity, an antidote to crisis.

#### NOTES

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## Biology as a Social Phenomenon

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Modern biology bears little resemblance to the life science of one hundred years ago. Gradual accumulation of facts has been superseded by stunning dynamism; observation, as the preferential form of cognition, by experiment which is only occasionally reminiscent of the real events it simulates; the idea of the organism's integrity, the foundation of a biological outlook, by systemic concepts, allowing the division of integral organisms into elementary components. Yet, the unlimited supremacy and application of physics and chemistry have become the most important factor in biology today. These advanced sciences have revealed their maturity, and their broad adaptability to the study of life processes, which are so different from the subject of their own investigation; in addition, they have led to the promotion of new disciplines, e.g., biochemistry, bio-organic chemistry, biophysics, molecular biology and molecular genetics. All these may be regarded as intrinsic factors, instrumental in the transformation of biology.

However, in today's society, modern biology develops in a different social atmosphere, something one must be clearly aware of. The past century has witnessed changes in social, economic, political and ideological institutions, and this could not but tell on the image of modern biology, a developing science, which by the virtue of this very fact is especially sensitive to environmental effects.

Gradually, biology has developed associations with social phenomena that overstep the bounds of its cognitive role. In the 19th century, Darwin's theory of evolution exerted a profound influence on social consciousness. In the 20th century, genetics, and eugenics in particular, have evoked broad reactions from very different social circles, even to the point of expressing themselves in the ugly

ideology and practices of nazism. From the beginning of the 1950s, molecular biology has had a noticeable influence, not so much by its conceptual foundations, which often escape the attention of non-specialists, as by the impressive effect of its discoveries.

Modern biology penetrates not only ideology, but also industrial production by gradual formation of biotechnology, thus ranking with physics and chemistry.

The meaning of this lies primarily in the assertion that modern biology has gone far beyond its initial form. Its contents are no longer exhausted by the cognitive task of reflecting the surrounding living world, and man as a part, thereof. Biology, as such, has become a means of changing that world by satisfying the human needs, interlaced in a complex tangle of social processes. One can trace these relationships to genetic engineering, a recently developed branch of molecular biology, and therefore quite suitable for analysing the cognitive role of modern biology and its relation to social phenomena.

The origin of genetic engineering should be dated to 1972, when Paul Berg and his co-workers at Stanford University obtained the hybrid DNA molecules, by methods still in use today. Genetic engineering may be defined as a system of experimental procedures which permit the creation in the laboratory of artificial genetic determinants, in the form of so-called recombination (hybrid) DNA molecules.

The living cell is, in effect, just a small chemical works, where production follows a hereditary programme loaded into one of its nucleic acids, namely deoxyribonucleic acid (DNA). Physically and functionally, the programme comprises gene blocks, each of which controls the output of a specific product (normally protein) and a specific cell function, dependent on that product. Hence, introduction into the cell of new genetic information in the form of recombination DNA molecules changes its geno- and phenotype, and the experimenter obtains a micro-organism moulded according to his objective.

The idea of reproducing genetic processes in the laboratory is actually of long standing; however, the development of genetic structures has for some time rather preoccupied the field of science fiction. The time has now come when physiological approaches in biological laboratories have been supplemented and deepened by molecular ideas, transforming the hitherto existing concepts on the essence of life processes, and enhancing the possibilities open to the experimenter. Yet, at first, biologists had no idea how to isolate the required genes from the enormous (even in the most basic organisms) DNA molecules, and how then to collect them in a single functioning structure.

Finally, the development of enzymology provided the investigator with instruments, suitable for such operations. These instruments are the enzymes created by nature itself and contained in living cells. Some of them (restrictases) separate DNA molecules in strictly defined sites into large and small pieces, while others (ligases), on the contrary, join them into one whole. After enzymes were extracted from the cells and purified, the creation of artificial genetic structures became a technically feasible task. That is how the era of genetic engineering began in biology, an era which presently has a guiding influence on theoretical studies and has initiated numerous practical applications.

Of the three components of any scientific discipline, namely: method, subject and cognitive idea, one should start with the first, since the essence of genetic engineering is the method. This refers specifically to the technique of dividing DNA molecules, the carriers of genetic information, into fragments by using highly specialised enzymes: restrictive endonucleases which affect only specific molecular sites, and in addition the reverse operation, involving the unification of those fragments, i.e., a DNA recombination molecule. This operation allows for any combination of DNA fragments, irrespective of their origin, size or structure. The recombination molecule also includes the DNA fragment which imparts to it the ability to reproduce and, in some cases, to synthesise proteins. The latter already takes place in the host-cell, wherein a hybrid molecule is introduced, albeit, in principle, this may be (and, no doubt, will be) achieved *in vitro*. Molecule hybridisation in the laboratory overcomes the interspecific crossing barriers, that nature has created to prevent the mixing of species. Genetic engineering permits a large number of individual genes to be isolated, then studies their structure and function by methods much more subtle than those available heretofore.

Analysing the course of events that resulted in genetic engineering, one should first of all note that it did not emerge suddenly from the sea foam, like an Aphroditis, and did not bring with it innovative perceptions of biologic phenomena, new cognitive ideas, nor the necessity to break down existing concepts. (In this case I refer to latest concepts, not those prevalent in the 1940s.) The understanding of the nature of heredity and the relevant problems involved have remained the same; what has fundamentally changed are the possibilities for penetrating deep inside phenomena. Moreover, a key has been found to a firmly locked door, thus permitting investigation in this area to acquire in the very least temporary freedom of headway. One can only be surprised that such a relatively small procedural step, as the discovery and use of restrictases and ligases, i.e., fragmenting and joining enzymes, has led to remarkable experimental opportunities.

It is generally recognised that a new stage has developed in the study of heredity: although the wealth of previous experience accumulated within the bounds of older disciplines, e.g., genetics, biochemistry, enzymology, molecular biology, microbiology and cytology, as well as the entire arsenal of ideas and methods, which had faithfully served the investigator before, are still well used. One can readily and without distortion of facts discover that in the past there were also events of a similar nature to those with which the experimenter presently deals within the framework of genetic engineering. Recombination in higher organisms is known to occur with mytosis and fertilisation; the recombinative processes taking place with the development of phages and viruses, and at conjugation in bacteria. A progeny of one specific type of molecule is obtained in the genetic engineering experiment. An analogue of this process is the cloning of bacterial and eukaryotic cells (higher organism cells), when the experimenter obtains a progeny of the same type of bacterium, animal or plant cells. Here we have profoundly similar processes, which differ only in that in one case cloning of molecules takes place, and in the other, cloning of cells.

Thus, the historical and logical roots of genetic engineering are well established. It should also be said that auxiliary methods improved in parallel with advances in genetic knowledge. Singer, Gilbert and Maxam developed a method for determining the sequence of DNA nucleotides; as a result, a possibility existed (albeit relatively weakly realised) of the functional properties of the genome being assigned to specific structures. Another important advance is connected with improvement in chemical synthesis of deoxypolynucleotides, which paved the way for chemical synthesis of genes to rank with enzymic synthesis.

During the eight years of existence of genetic engineering, numerous previously unknown methods were developed and applied. The knowledge of genetic engineering has a revolutionary significance for the study of genome organisation, not only in relation to simple subjects (viruses and bacteria), but also higher organisms. Naturally, the methods developed in the preceding period produced a lot of useful data on the molecular organisation of the genome; however, these methods were slow, labour-consuming and lacked universality. The great molecular weight of genome DNA created a constant and almost insurmountable obstacle. Indeed, even the most primitive viruses have a genome DNA with a molecular mass of up to 2 million dalton, in the colon bacillus this mass already reaches up to  $2.5 \times 10^9$  dalton, and in man by three orders of magnitude more, i.e., about  $1.8 \times 10^{12}$  dalton, which corresponds to approximately 3 million genes.

It is evident that the functional organisation of the genome is based on subtle structural relations, and only an accurate chemical

analysis is capable of bringing us to an understanding of the working mechanisms of the genetic apparatus. Basically, this possibility is ensured by genetic engineering techniques permitting the isolation of small, precisely known genome sites. Genetic engineering permits obtaining individual genes by chemico-biological synthesis, or isolating them from natural material, i.e., the seclusion of control sites. The parallel development in chemical synthesis of deoxyoligo- and polynucleotides, and methods for analysing the initial structure harmonically fitted into the procedural system of genetic engineering. Incidentally, this once again emphasises that, no matter how significant the advances of one biological discipline, every really major step is achieved only through comprehensive, systems study, involving a many-sided attack on the problem.

It was already mentioned that genetic engineering, initially, did not suggest any new concepts for the molecular foundations of heredity; however, this does not in any way signify that the information accumulated in genetic engineering was not responsible for producing anything new. On the contrary, the initial stages were already marked by unexpected discoveries, one example being what has become known as mosaic genes which exist in higher organisms, yeasts and certain viruses. They are genes that code a specific protein, but are interrupted by insertions that have no direct relation to the latter.

Due to this gene structure, which was found to be normal in higher organisms, the cell undergoes so-called processing, the existence of which was previously unsuspected. It is known that realisation of genetic information requires primarily a gene copy with all its insertions and significant elements, to result in the formation of a precursor of informative RNA. Then all the insertions in the copy are extracted by special enzymes, and the significant fragments combine to form "mature" informative RNA, over which the respective protein is synthesised. This was followed by elucidation of the nature of mobile genetic structures: bacteria transposones and mobile elements in higher organisms. These two were the most significant discoveries in recent years. It is hard to predict what other discoveries are pending in the forthcoming years. One can only be sure they will come into being and, who knows, may compel biologists to revise some of their existing views.

The question people usually ask in connection with genetic engineering is "can it help produce and has it produced new organisms?". The answer to this question is in the affirmative, though with some qualifications. The amount of genetic information with which the modern experimenter operates today is relatively scarce and, even if it were considerably greater, in artificially created structures it cannot be organised as needed, to create a completely new organism.

Our ideas on the structural foundation of genetic regulation are still far from perfect. Only a limited number of genes capable of changing, to a limited extent, the genetic status and phenotype of a bacterial or eukaryotic cell may be introduced into the latter. Yet, the possibility of introducing into the cell some alien information relating not only to some other species, but even type, changes the situation. A colon bacillus containing human functioning genes is undoubtedly a new organism.

A characteristic feature of genetic engineering is that reproduction in the laboratory of certain key genetic processes has been achieved at a molecular level. What in nature is the privilege of the whole organism, has in the laboratory become an operation performed at cell and molecular levels. The experimenter deals with the gene without any mystical blessing, and similarly with a DNA fragment isolated from natural sources or synthesised. Recombination, i.e., the process and result of combining genes in a new entity, occurs in the test tube at the option and will of the experimenter. In this case, the omnipotent role of chance is restricted to such an extent as to be virtually ignored. Guided mutations, again conducted in the test tube and localised exactly within the gene selected as a target, have already become possible. And here the role of chance becomes secondary, the principal factor being the purposeful activity of the investigator and his experimental expertise.

This interference into a heretofore forbidden sphere cannot but make a deep impression, especially as genetic engineering is still only in its initial stages. Such is my evaluation of the cognitive contribution of genetic engineering. The latter has introduced new avenues for the experimental study of heredity, leaving untouched the generally accepted ideas and tenets of genetics. Yet, the very first steps in genetic engineering have already brought unexpected discoveries, and this makes one assume that existing views will probably once again be revised, even though it is hard to say to what extent this will progress. At any rate, if the appearance of genetic engineering may be regarded as a revolution in genetics, this revolution is being achieved with both minimum expenditures and complications.

Another aspect of genetic engineering concerns its involvement in the scientific and technological revolution.

One may assume that in the months and years to come, the use of genetic engineering techniques will result in several physiologically active proteins; namely insulin, somatostatin, somatotropin (growth hormone),  $\alpha$ -thymosine, interferon, and some others. The first three are hormonal preparations, and the other two, immunity-stimulating substances. With regard to structure and effect, they will correspond to human hormones, but will be created by micro-organisms, reproduced in a laboratory situation, foreign genetic information having been introduced into the said micro-organisms. These

preparations will be available in unlimited quantities, and the production cost will be low. On top of that, genetic engineering will be helpful in obtaining superior cells capable of generating products inherent in the former, but in larger quantities. Such bacterial "super-cells" producing, for instance, enzymes and certain amino acids (treonin, prolin, etc.) have already been obtained.

An entirely different sphere of applied innovations is associated with nitrogen fixation, treatment of hereditary diseases, and so on.

Genetic engineering has taken the path of commercial and generally practical application. This has happened in an incredibly short time. Normally, practical use of the results of theoretical studies takes many years to be implemented. In the case of genetic engineering, however, this will take no more than 10 years, from the moment of its appearance in the world of science. This rapid rate of development is essentially due to the history of the origin of genetic engineering, described above. Despite the major advance brought about by genetic engineering in the study of heredity, there was no necessity whatsoever in fundamental restructuring of the existing views on nature and the character of hereditary processes, since the advance was essentially made along a previously trodden path.

The pharmaceutical industry developed what was termed as the "DNA industry", marked by the emergence of companies intent on using production processes based on genetic engineering know-how.<sup>1</sup>

At present, it is difficult to determine what firms do not deal with genetic engineering. However, several companies were set up specially for this purpose, namely Genentech, USA (1976), Biogene, Switzerland (1978), Genex, USA (1977), Hybritech, USA (1978), Agrigenetics, USA (1980), Transgene, France (1980), and Genetica, France (1980). Of these, Genentech and Biogene are regarded as the leading ones. The total capital of the above-mentioned companies is hard to calculate, but according to available data it amounts to at least \$500,000,000 for the five largest.

Among the established pharmaceutical firms, Cetus Corporation, USA, started genetic engineering earlier than the others. Many industrial giants invest millions of dollars in the above-listed companies to purchase the right to commercially manufacture future products. This concerns, for example, Eli Lilly Co., Shering-Plough, Upjohn, Searl, Merck, Sharp & Dohm, Hofmann-Laroche, and others, although some set up their own genetic engineering laboratories. Strange as it may seem at first sight, Dupont de Nemours, General Electric (USA) and Imperial Chemical Industries (Great Britain) also do the same thing.

Apart from pharmaceutical companies, large industrial firms, e.g., International Nickel Co., Lubrisol Enterprise, New Jersey, Coppers Company, National Distillers, Banc de Paris, and others also invest in

the DNA industry. Thus, big monopoly capital is active behind new companies.

It should be noted that investment in genetic engineering involves certain risk due to competition among companies starting from scratch, so to say, and competitive methods of production. For example, interferon may be obtained both by genetic engineering techniques and cell culture. The former are used by Biogene, Genentech, the Weizmann Institute of Science (Israel) and the Institut Pasteur (Paris), and the latter is being developed by the Yeda (Research and Development) Company, Japan, with the aid of the afore-mentioned Weizmann Institute of Science and Wellcome Research Laboratories (Great Britain).

Agiotage ventures reminiscent of the time of Jack London and nourished by the sentiments fostered in the mass media and, not in the last place, by scientists themselves, though they claim that they do not seek publicity for the sake of money, reign in business circles. They do not leave the risk of investment in the DNA industry out of their reckoning, regarding near tragic the prospect of becoming outsiders in a big game.

Conviction (perhaps better termed as faith) in a bright future of genetic engineering plays a substantial role. A prominent figure in the US pharmaceutical industry once said that the potential applications of recombinant DNA techniques are limited only to the imagination of those who use them. Patenting is now in full swing (nearly 150 applications have been submitted in the United States), and the first controversial cases on copyrights and patents have already been filed in courts.

Complete commercial processes are still pending; however, it is assumed that in the near future, they will be developed for insulin, human somatotropin and somatostatin, interferon,  $\alpha$ -thymosine, an antigen to hepatitis B virus, and some other products.

Without waiting for investigations to be completed, Eli Lilly Co. intends to build two factories for manufacturing human insulin, the cost of the entire project being \$40,000,000.

New reports are being published on investments by big industrial companies in the DNA industry. For instance, Dow Chemical Company recently signed a \$5,000,000 contract with Collaborative Genetics, a small firm specialising in yeast genetic engineering. Monsanto, Dow's competitor, has invested \$20,000,000 in Biogene. In the autumn of 1980, National Distillers and Corporation announced its \$100,000,000 project for continuous obtainment of alcohol from maize, using yeast genetically engineered by the Cetus Corporation.

The DNA industry has penetrated the stock exchange, the holy of holies of capitalism, certainly coming into the focus of attention of the men running that institution. On January 18, 1980, Charles Weissmann declared at a press conference in Boston that a human

interferon gene functioning in a bacterial system had been obtained in a Biogene laboratory; after that, the shares of Shering-Plough, which owns 16 per cent of Biogene's shares, went up eight points and, at least temporarily, increased the former's capital by \$425,000,000.

One day in autumn 1980, Genentech for the first time started openly to sell its shares for \$36 each; in several minutes, the price on the stock exchange jumped to \$89. When the stock market closed that day, the shares cost \$71.25 each. This meant that the total cost of Genentech's securities reached \$529,000,000.

All this happens speculatively, no specific product is being either manufactured or marketed. The game going on at the stock exchange has come to involve mere prospects that promise big profits. In the entrepreneurial activity of the capitalist world, all these events cannot be explained simply by the achievements of genetic engineering, successful publicity by scientists, or emotional receptivity of businessmen. The crux of the problem lies deeper. The basic reason is in that a new era, the era of biotechnology, the utilisation in industry of biological agents and processes, has dawned in the commercial world. Biotechnology may be regarded as a sister of mechanical and chemical engineering, but as yet with modest possibilities.

Man long ago used biological processes for fermenting bread, wine, beer and other products. The scientific application of biological processes is a recent development dating to the emergence of microbiological industry and use of immobilising enzymes. Genetic engineering techniques fit in a natural way into biotechnology, thereby expanding the sphere of biotechnological processes and asserting the reality of this pathway. Future inroads are perceptible in the development of genetic engineering in applied spheres, as are also the commercial production of plant and animal cells. Thus, the boom caused by genetic engineering is not essentially attributable to any one particular reason, but rather to the spontaneous premonition of the ushering in of yet another industrial revolution, this time connected with biology.

In the United States, all these events were cumulatively responsible for the insurge of big capital to academic life. The ideas and newly acquired knowledge used in the pharmaceutical industry directly associated with genetic engineering have, after all, had their origins in university laboratories. Molecular biologists have become the founders of scientific councils, shareholders, and even proprietors of fortunes. For example, today H. Boyer and R. Swanson, founders of Genentech, have capital assets which amount to \$82,000,000 each, they both started out with only \$1,000 each. The mentality of enterprise, not devoid of elements of adventurism, has penetrated academic shrines that had thus far prided themselves on

their unselfishness and adherence to the lofty ideals of pure science. It is interesting to see what the consequences of this process will be in the academic field. Will the ideals it publicises withstand the severe test?

One more aspect of genetic engineering concerns its ideological essence, to which certain circles in US society had reacted so stormily.

The opinion that genetic engineering poses a danger to society is widespread. Now, what danger is seen in recombination DNAs? To begin with, presumably harmless micro-organisms, the colon bacillus for instance, may under the effect of introduced foreign genetic information, through unforeseen circumstances, turn into a pathogenic organism. Secondly, some biologists think that micro-organisms containing recombination DNAs, may acquire some ecological advantages to disrupt the balance of microbial populations in the environment.

The first possibility seems hardly likely. The violation of ecological equilibrium, however, appears more probable, since mankind has succeeded in this respect, having violated the balance of, say, nitrogen, and introduced into the environment a mass of xenobiotics, for example pesticides essential for farming, but capable of exerting undesirable side-effects on the environment. Finally, with the introduction of genes of physiologically active substances, e.g., insulin, colonisation of the human gastroenteric tract by micro-organisms may cause pathological states that are difficult to eliminate. In the long run, these fears are unjustified.

The view that recombination DNAs are dangerous was initially promoted by American scientists themselves, who at the 1973 Gordon Conference published a type of manifesto, declaring the potential danger of recombination and pointed to the necessity of imposing a moratorium on all relevant research until such time as the actual state of things was clarified. A big campaign started very quickly in the United States concerning the presumed danger of recombination DNAs. The campaign was joined by the sensation-prone US press, radio, and television; as a result, the US scientists' declaration received wide publicity, and the ball started rolling.

It should be said that the campaign against genetic engineering has a precise geographic characteristic: it developed in the United States; all other nations, including the socialist countries, reacted in a much more restrained and reasonable way.

Subsequently, US scientists split into several groups. Some unconditionally continued the campaign against genetic engineering, among them those connected with various movements and societies of a political nature and those, like the biochemists J. Wold and E. Char-gaff, who were not affiliated. Others took another path: they started specific research to elucidate the extent to which recombination



DNAs are dangerous and, hence, stimulated relevant work by a limited number of people.

The public campaign continued as before to primarily involve various societies with very indefinite political and scientific physiognomies, and were subsequently joined by municipal councils, which had chiefly mustered incompetent people. Finally, the issue of genetic engineering reached the US Congress. Religious organisations also joined the campaign. Here is what Pope John Paul II said during his visit to UNESCO in Paris on June 2, 1980: "We are well aware, ladies and gentlemen, that the future of man and mankind is threatened; radically threatened, despite very noble intentions, by men of science. And it is menaced because the tremendous results of their research and their discoveries, especially regarding natural science, have been and continue to be exploited—to the prejudice of ethical imperatives—for ends which have nothing to do with the prerequisites of science, but with the ends of destruction and death... This can be verified as well in the realm of genetic manipulations and biological experiments as well as in those of chemical, bacteriological, or nuclear armaments."<sup>2</sup> The Pontiff expresses concern about the danger of genetic engineering, without specifying what that danger actually consists of.

The US National Institute of Health has drawn up rather strict rules for working with recombination DNAs which, incidentally, are compulsory for individuals receiving funding from that institution, but industrial enterprises had never officially followed these rules. At present, the whole campaign has been abandoned: scientists have sounded off, public organisations have left the scene; senators have lost interest in the subject; and the rules have been revised and alleviated. This happened for two reasons: first of all, up to date no experimental evidence has been obtained regarding the potential danger of recombination DNAs and, secondly, genetic engineering proved to have applicable importance and the possibility of being used commercially, something that I had already mentioned above. This naturally had decisive significance for people abandoning the idea that genetic engineering presents a danger and needs rigid control.

Yet, to what extent is science capable of countering the menace of recombination DNAs if they are after all not harmless or prove to be dangerous in future? The existing century-old experience with pathogenic micro-organisms shows that science is fully armed with the knowledge and equipment, necessary to protect the personnel, population and environment involved.

Finally, a few words about biological weapons. Can genetic engineering be used to create biological weapons? Yes, of course. However, this is no special issue, since both chemistry and physics can also be, and are, as is common knowledge, used for creating

means of destruction. The issue is more concerned with the sphere of politics and social relations, and its solution depends on the good-will of people and on international agreements.

Summing up, one can note that the reaction of public opinion to genetic engineering was little concerned with its basic world outlook. Only religious circles protested, seeing in genetic engineering an attempt to accomplish scientifically what they regarded as prerogatives of a deity, namely, the creation of living beings and changing of foreordained nature. However, these protests, as far as we can judge, have had only limited repercussions. Some scientists also made certain similar statements. For instance, E. Chargaff queries whether or not scientists have the right to encroach irreversibly on the evolutionary wisdom of millions of years, simply to satisfy the ambition and curiosity of some of their profession.

Much more widespread were the protests against the presumed danger of recombination DNAs. Basically, they were not so much concerned with any specific properties of these artificially obtained molecules, which could not be competently assessed by all those who took part in the protest campaign, but with an instinctive fear for the dark and dangerous forces of science in capitalist society. These forces had already sinisterly revealed themselves in the most modern forms of aggression: in the atomic and thermonuclear bombs, chemical weapons, and other means of mass destruction.

No wonder the campaign against genetic engineering has developed with particular force in the United States, the most powerful capitalist country, where violence and terrorism, outbursts of enmity and armed clashes, organised crime and corruption not only of individuals, but also corporations, coexist with highly developed industry and wealth.

At present, this protest campaign is abating. Apart from the two aforementioned reasons, this is also due to the fact that the menace of recombination DNAs looming in the bleak future, pales before the stark realities of today: the intercontinental and cruise missiles, neutron and binary chemical bombs, to mention but a few. Human consciousness cannot contain all the fears and threats that saturate modern life and allows instead a constant submergence in the subconscious. Perhaps this is what is now happening with genetic engineering.

To sum up, genetic engineering belongs to the sphere of molecular-biological disciplines, because it deals with hereditary processes on a molecular level. The cognitive idea of genetic engineering coincides with that of molecular biology. The essence of genetic engineering lies in procedural innovation which permits the artificial creation of genetic structures and uses them to change the cell pheno- and genotype.

When genetic engineering first appeared, it required neither the need to abandon already existing genetic concepts, nor the introduction of additional concepts. Yet, from the outset it helped uncover new phenomena, and this factor makes it possible to assume that biology has taken a road, which will ultimately result in the revision of previous concepts in the field of genetics.

Having once again shown through genetic engineering the cognitive potential of the molecular method, the approach based on molecular biology has for the first time revealed its applied possibilities. The form taken, being that of the DNA industry, is based on genetic engineering techniques and therefore representing one of the modern branches of biotechnology.

The social repercussions caused by genetic engineering were concerned with ethical, philosophical and social problems. Although they were caused by unreasonable assumptions, they in themselves are indicative of the significant role which biology is just beginning to play in modern society.

#### NOTES

<sup>1</sup> See my relevant article in *Vestnik Akademii nauk SSSR*, No. 11, 1980, p. 74.

<sup>2</sup> *Science*, Vol. 208, June 27, 1980, p. 1441.

## Problems of the Study of Man

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With the emergence of man came the various manifestations and problems of his nature. These materialised at the dawn of human history as the product of the yet primitive man's consciousness. Gradually they developed and modified according to the socio-economic conditions of life thus assuming increasing significance for all mankind. The call of the ancients "know yourself" sounds today not only as an urgent need for self-consciousness and a heuristic problem of natural science and philosophy, but as a categorical social imperative.

The reasons are quite understandable. We live in an epoch of unprecedented fundamental changes in the life of mankind. The rapid course of history, the revolutionary transformations in the world, and the growing class contradictions and class struggle, on the one hand, and the enormous and ever increasing consequences of scientific and technological progress, on the other, pose before humanity the problem of its future in all the infinite diversity of man's existence as an individual and a single biological species.

In assessing the significance of this problem, we must proceed from the unquestionable tenet that man has become the custodian of our planet, and the sole sovereign of the destiny of life thereon. The development of mankind and human intellect resulted in the emergence on Earth of *scientific thought*, a new geological force previously absent therein.<sup>1</sup> Due to this, man himself acquired the significance of a geological factor, "which with regard to possible consequences surpasses the tectonic displacements that were assumed—strictly empirically, by way of empirical generalisation—to be the basis for geological separation of the Earth's space and time".<sup>2</sup>

Further complications of the problem of man confront the investigator with major difficulties. However, the increased possibilities of modern science also open new roads of knowledge to him.

In our view, to ensure progress in the study of this problem it is important for the investigator to be not only well-conversant with natural science, so that he can use adequate scientific data in his analysis, but also base himself on dialectical materialism.

A major complication in the study of man's nature is that, being a biosocial creature, he develops under the combined interaction of both the social and biological components of life. The intrinsically controversial unity and interaction of the biological and social forms of organisation of matter constitute a complex dynamic picture. This is manifested in a specific way at various stages of the historical development of each individual, and mankind as a whole.

#### BIOSOCIAL NATURE OF MAN

Nobody can doubt that, being a sensuous creature, man is a product of the evolution of life on our planet, and as such is endowed with all vital attributes, namely self-regulation, metabolism, variability and heredity. The ontogenetic development of man and his morpho-physiological differentiation adhere to the principle of recapitulation and are realised in a genetic programme which is coded in forty-six chromosomes, localised in the nucleus of every somatic cell of any normal individual, irrespective of race, nationality, or class. The principles and mechanism of biosynthetic control in man do not differ from those in other eukaryotic organisms, and transmission of hereditary information from generation to generation is governed by the general laws of the chromosomal theory of heredity.

The human beings inhabiting our planet belong to the single polytypical species *Homo sapiens*. Racial differentiation of mankind and, moreover, national frontiers have not created mechanisms of reproductive isolation. Gene exchange is continually increasing within all humanity to create a common gene pool constituting the species' principal wealth and natural base for further progress and prosperity.

Having developed under the laws of organic evolution man has retained in his biological organisation direct continuity with the class of terrestrial *Mammalia*. The genetic affinity of man and his animal ancestors is quite evident.

At the same time, in the course of evolution, man acquired a number of specific features of biological organisation, features that resulted in vast opportunities for progressive development closed to other representatives of the animal world. At a definite evolutionary

stage specifically human forms of social organisation, namely, work, production and production relations, emerged to determine the future course of human history and to ultimately give rise to contemporary civilisation.

Since the time when biological evolution of man gave rise to social forms of life, as a subject of history and member of the human work collective, he ceased to be a purely biological being. The biological form of his corporeal and neuro-psychic organisation had come into contact with the conditions and requirements of social life. Since that historical moment, man as an individual started to develop under the combined control of continuously interacting programmes: the biological programme, which had emerged with evolution of man and his ancestors, and the social programme, which had formed on a definite biologically prepared foundation and, in the course of mankind's development, had acquired ever increasing force. Thus, man became a product not only of biological, but social life, i.e., he acquired a biosocial nature.

Quite understandably, man's biosocial nature excludes the possibility of regarding him solely in biological terms. In criticising Feuerbach's anthropological materialism and his principle of man's religious self-alienation, Marx formulated his famous thesis stating that "the human essence is no abstraction inherent in each single individual. It is reality, it is the ensemble of the social relations."<sup>3</sup>

By this formula Marx rejects Feuerbach's idea that human essence may be regarded as a certain abstraction of "... a 'genus' ... which merely *naturally* unites the many individuals".<sup>4</sup>

The idea that human essence is an abstraction of a genus is erroneous not only in the philosophico-methodological sense, but from the viewpoint of natural science, since it proceeds from a typological concept in characterising "genus". This concept, inherent in the natural science of the last century and the beginning of this century, is rejected by modern biology, which has developed a typologico-statistical criterion for characterising any feature of every species of organisms.

Does Marxism really reject the natural, biological individuality and the subjective intrinsic world of a man living within a social system? Does the Marxian thesis envisage man's alienation from his natural environment? Of course not; Marxism provides an absolutely clear and unequivocal answer to this: "*Man* is directly a *natural being*. As a natural being and as a living natural being he is on the one hand furnished with *natural powers of life*—he is an *active* natural being. These forces exist in him as tendencies and abilities—as *impulses*. On the other hand, as a natural, corporeal, sensuous, objective being he is a *suffering*, conditioned and limited creature, like animals and plants. That is to say, the *objects* of his impulses exist outside him, as *objects* independent of him; yet these objects are

objects of his need—essential objects, indispensable to the manifestation and confirmation of his essential powers.”<sup>5</sup>

Recognition of the biosocial nature of man means in effect acknowledging the unity of the social and biological in the nature of man as an individual and personality within society. This unity is realised and displayed mostly in that the forms and norms of social consciousness determined by the form of social production and ideology (not biology!) of the ruling class are perceived and realised as essential powers in the social practice of each individual differently, depending on his natural powers—disposition, abilities, and inclinations.

During the entire history of mankind, the formation and development of society naturally took place according to its own laws. Yet, at all stages of history, man has preserved his natural essence and, developing in society as a social being, he retained his biosocial individuality.

In other words, man's biosocial nature, having developed historically and materialising at particular stages of social development, invariably was and continues to be the source of man's enormous variety in his spirit, essential powers, and social activity.

Thus, in the absolute, both the biologisation and sociologisation of man as an individual and personality are equally unsuitable as starting points for studying and understanding the essence of man.<sup>6</sup>

The rudiments of biosocial organisation were already inherent in man's hominid ancestors. They appeared on the basis of a unique biological organisation, which in turn caused the possibility of a vector or rather a whole spectrum of vectors of selection which directed the evolution of this group thus generating the development of modern man. Hence, one should seek the roots of man's biosocial essence and its material foundation and developmental regularities back to his evolutionary past.

#### FACTORS OF MAN'S BIOSOCIAL EVOLUTION

The evolutionary characteristics of the ancestors of *Homo sapiens*, namely the peculiar interaction of actuating, stabilising and destabilising effects of selection and the ever increasing role of stress as the internal factor of evolution and the engendering source of hereditary variability in combination with mutation and gene drift, have created man's biological organisation. However, biological organisation alone could not and did not create man.

Man's socialisation which came about on a biologically prepared foundation and his transition to forms of social organisation of life, qualitatively differing from those of his hominid ancestors, became the key stage in the forming of *Homo sapiens* as a biosocial creature.

The significance of this factor was at one time fully assessed and characterised by Engels: “For evolution out of the animal stage, for the accomplishment of the greatest advance known in nature, an additional element was needed: the replacement of the individual's inadequate power of defence by the united strength and joint effort of the horde.”<sup>7</sup> Undoubtedly, the road of social life was taken by the biologically most advanced groups, primarily by those that had mastered the art of speech and the elements of labour to a greater degree than others. At the same time, these were the groups whose members possessed the ability for daily mutual contacts, i.e., for those behavioural traits without which no group can exist.

The founders and members of these groups possessed all the individual diversity, genetic variability inclusive, that had been created for centuries prior to man's socio-biological evolution. On the other hand, the forming and development of collective forms of life and the creation and ever greater complication of the social medium signified the emergence of a new ecological situation, which demanded new biological characteristics in socially organised individuals.

In *The Origin of the Family, Private Property and the State*, Engels provided a then timely and comprehensive analysis of the role of the biological component and of generic-biological ties in the formation and development of society and social relations. His remarkable work made use of vast material on the formation of initial human groups to show that the development and historical change of social forms of life and of blood relationships among members of society were essentially conjugated. Engels cites many instances showing that, at a certain stage of development of social relations, the social and the biological components were in close interaction.

He also quite definitely assessed the need for changing certain major biological components—behavioural elements inherent in man's ancestors—as a precondition for engendering human social forms of life. In this connection, he wrote: “Mutual toleration among the adult males, freedom from jealousy, was, however, the first condition for the building of these large and enduring groups in the midst of which alone the transition from animal to man could be achieved.”<sup>8</sup>

The forming of society and of social relations caused the necessity for developing and strengthening those properties of the nervous system and behaviour that would best adapt the individual precisely to social norms of life, the requirements of a given group, and to its multiform traditions to thereby promote the development of collective forms of life. Hence, the properties of the nervous system on the basis of which man's abilities for collective life forms developed became a major subject of natural selection, beginning from the very early stages of man's socialisation.

Yet, the dialectics of history is that, being the subject of evolution, these properties, under conditions of social life, at the same time also became a *powerful factor of evolution*, i.e., a selective factor that had caused the formation of man as a biosocial being. From that moment in history and over a lengthy period of development of primitive society, the lot of the individual and of individual human groups, and also the possibilities of their contributing to the gene pool of subsequent generations, were already assessed not only by abiotic environmental conditions, but to no lesser degree by purely biotic conditions, primarily by behavioural relationships among individuals within the group as a whole. With time, precisely society, up to a definite stage of development, became an increasingly greater selective evolutionary factor, gradually forming a *Homo sapiens* gene pool adequate to its own social requirements.

Quite understandably, man entered this phase of human history as a species already possessing a *vast scope of hereditary variety* with respect to all his morpho-physiological properties, including the *neuro-psychic ones*; this was a *premise and essential condition for man's rapid development as a biosocial being*.

In principle, neither the biosocial evolution in the initial stages of human society, nor the latter's subsequent development according to its own laws, delineate genetic variety among individuals. On the contrary, in the initial stages of social life, this variety apparently continued to increase because of several possible reasons, among which it is, of course, essential to note the role of individual selection in social life.

Operating with genetic material controlling the development of various properties of the nervous system and nervous processes, and adapting these properties to conditions of social life, selection intensified individual variability in man in the initial stages of his biosocial evolution to create a natural, biological foundation for forming the most adequate norms of life and behaviour in primary human groups as integral formations.

Another reason for greater genetic variability among individuals belonging to primary human groups is that, in this evolutionary stage, inter-group selection became stronger than before. In the evolutionary stages in which inter-group selection was effective, it could not, even indirectly (i.e., through the properties and characteristics of a given group), but use individual genetic differentiation within given groups.

Elimination of inter-group selection, resulting from growth of the human population and increasingly greater development and complexity of society, in turn led to intensified migrations of genetic material. This reduced to nil inter-group hereditary variability, but enhanced inter-individual variability within a common human species.

What then were the properties of nervous processes and behaviour that on the whole came under special control of selection in the initial phase of social life?

To begin with, let us note that, if one were to speak of typology, such properties of the nervous system as the intensity of the irritative and inhibitory processes continued to be under that control as in the pre-social stage of life. The forces of stabilising selection retained these properties of the nervous system at a level, optimally adapting the individual to environmental conditions and specific forms of life and work in a given group.

On the other hand, in accord with the good reasoning of S. Davidenkov, an outstanding Soviet evolutionist and neuropathologist, mobility of nervous processes became a particularly important subject of selection under social life.<sup>9</sup> This property was exceedingly important also in the pre-social evolution of man. But in conditions of group life, work and use of speech, mobility had acquired highly specialised significance. Davidenkov justly emphasised that speech in particular, being a specific human attribute, a way to express abstract thought and formulated concepts, could not develop and attain perfection without highly mobile nervous processes.

A specifically directed evolution of the brain and of nervous properties, and their significance as evolutionary factors, resulted in that, from the initial stages of human biosocial history, they fell under the control of selection, which with time showed increasingly higher potency for making the individual learn, perceive and transmit the experience of previous generations, as well as develop self-control and highly trained behaviour. This served as a foundation for developing the individual's self-consciousness as a member of a given group, and was gradually followed by the rise of intelligence, a quality inherent only in man.

Among the diverse factors that shape these qualities under a social environment, let us again note the significance of stress, whose role as an evolutionary, i.e., *selective* factor, on the one hand, and a factor that trains the human nervous system, on the other, has exceptionally grown to acquire special significance. One can hardly doubt that the word, having acquired a many-sided semantic load, became more viable at the height of man's nervous organisation than, say, the club of Neanderthal man. For normal life in society, one must acquire the ability to withstand the numerous outcomes of psycho-emotional stress, which have increasingly become not only man's companion, but an intrinsic condition of his existence.

At the same time, a state of sufficiently strong, occasionally very strong, stress is an essential prerequisite of an active social life and creative activity. Hence, the ability to sustain this state is as necessary as the inseparably related capability to cope with stress loads and at

the same time remain within the bounds of behavioural "norms" tolerated by society. All these qualities of the human nervous system have formed by natural selection on the basis of inter-individual hereditary variability as early as at the initial stages of a still primitively organised society. These properties could have been of exceedingly unstable nature, but were highly trained by requirements of social life, i.e., by society itself. The above-said properties of the nervous system have increasingly developed and perfected along with man's biosocial nature and further complication of society and its multiform demands towards individuals.

In conditions of social life, in other words in the phase of biosocial evolution, man also developed the quality of altruism—the ability for self-sacrifice for the sake of the interests of his fellow men and society as a whole. Altruism undoubtedly serves as an expression of the ability of man to control his behaviour, and its social significance is tremendous. The biological prerequisites of this lie deep in the evolutionary history of life, and as a prototype they show in the care that adult animals take not only of their progeny, but of members of their herd or flock.

The evolutionally significant and formative pathways of human altruism were already examined in detail by Darwin and had subsequently time and again attracted the attention of numerous thinkers and natural scientists, e.g., P. Kropotkin, J. B. S. Haldane, D. Filatov, V. Efroimson, B. Astaurov, and P. Darlington.<sup>10</sup>

All these authors revealed the evolutionary-genetic foundation of altruism. The basic thing here is that, in conditions of inter-group selection, the ability of certain group members to sacrifice their personal interests and even life for the interests of the group brought major evolutionary advantages to the group as a whole. The works of the above-mentioned Soviet investigators justifiably emphasise the basic opinion that altruism as an individual property forms in man under the determining influence of conditions of social life, moral standards and traditions of the social environment.

Like its alternative—egoism and anti-altruism—altruism, in the varying life conditions of a morally underdeveloped society, had a different adaptive value; but, since life conditions constantly changed, all three became involved in the sphere of group selection, while the underlying gene systems became involved in the human gene pool.

The forming of a highly flexible and trainable brain and nervous processes, including an optimum level of stressfulness and stress-resistance as the biological foundation of learning, i.e., perception of the effect of speech as a means of transmitting experience, was an event of great importance in mankind's development.

On the basis of these properties, there appeared even in primitive society a fundamentally new pathway for forming human behaviour,

a pathway based on transmitting, perceiving and perfecting the experiences of previous generations and one's contemporaries.

In expressing his appreciation for the tremendous significance of this process, Thomas Hunt Morgan, founder of the chromosome theory of heredity, noted: "There are, then, in man two processes of inheritance: one through the physical continuity of the germ-cells; and the other through the transmission of the experiences of one generation to the next by means of example and by spoken and written language."<sup>11</sup> M. Lobashev, a well-known Soviet geneticist, termed the continuity between generations through transmission of experiences and training as *signalling heredity*, and stressed that having originated as part of evolution, it acquired special significance in the development of human society. Civilisation as a whole is a vivid example of the transmission of life experiences from one man to another via the second signalling system.<sup>12</sup>

Davidenkov, who formulated the concept of continuity, analysed remarkably well the significance of man's ability to transmit and perceive experience. According to him, let heredity be that which is transmitted from generation to generation through sex products; as for that which is transmitted by training, let us term it "continuity", he says. With such an approach, there can hardly be doubt as to which of the two basic groups the entire socio-labour essence of primitive man should be assigned: *entirely to the sphere of continuity of course*.<sup>13</sup>

Academician N. Dubinin also gives major significance to the fact of cultural and social continuity; he calls it "social inheritance".<sup>14</sup>

Since the time when man took the path of social life, continuity based on the brain's flexibility and its ability to form programmes of individual behaviour corresponding to social environment has become a major natural factor of social progress and a major component in the development of individual qualities in all the multiformity of their expression. Ever since then, the realisation of man's genetic programme had fallen under the rigid control of the social environment determining the cultural and labour traditions and behavioural standards in society.

Hence, no matter how one understands cultural continuity, it is without question that ideology and all labour, moral and other social traditions of society and its constituent classes are determined by social conditions created by the nature of social production. Yet, in determining social self-consciousness, social conditions do not eliminate hereditary differences between individuals. This was very clearly outlined by P. Fedoseyev, who wrote: "In analysing individual behaviour, there is need for a differentiated approach that would take into account both the social and biological (natural, in general) conditions which in inseparable interaction determine that behaviour."<sup>15</sup>

To my mind, a major task in studying the essence of man and the prospects of his future is largely in realising the *inseparability* of the interaction of the social and biological in a common biosocial human nature, as well as the historical dynamics of this interaction and its concrete manifestations at various stages of human history, past and present.

#### SOME QUESTIONS OF MAN'S GENETIC POLYMORPHISM

At present human genetics represents a highly advanced and rapidly progressing scientific discipline. The genetic systems determining many physiological and biochemical features in man have been studied sufficiently well, and quite extensive evidence has been accumulated on the genetic and cytogenetic foundations of many pathologies, including psychic ones. The genetic properties of human behaviour and higher nervous activity in health generally have been studied far less. There is no need to argue the great scientific and practical significance of comprehending whether or not the genetic factor affects, and if so, to what extent, the development of standards of human behaviour in society; the inclination of man to apprehend, reject or even consciously violate labour and moral traditions and ideals; the predominance in human behaviour of feelings of fellowship and collectiveness or, on the contrary, feelings of individualism and egoism, occasionally displaying almost pathological manifestations of boundless vanity, careerism and even cruelty towards others; and finally, the level of human intellect and its ability for creative activity.

Genetic analysis of all these objectively existing human properties is made exceedingly difficult because of a number of reasons; one of the main reasons is that man cannot understandably be the same sort of subject of genetic analysis as usual subjects of experimental investigation.

Another no less important reason is that the genetic component of all the above-mentioned and many other human psychic characteristics is masked by an exceptionally high level of training of nervous processes and by the influence of life conditions. It is virtually impossible to take into account by any accurate quantitative measure the level of this training and the many conditions affecting man at all stages of his individual development, and this may make the results of the investigation highly indefinite.

One should take into consideration that not only the earliest prenatal effects, but conditions of embryonic development caused by the physiological and neuro-psychic condition of the maternal organism, the level of its psychic stress in particular, strongly affect many of the behavioural features in both animals and man. Some of

the ontogenetic stages, the so-called sensuous periods, have special significance in the forming of neuro-psychic and behavioural characteristics. For example, despite the fact that features of human intellect do develop throughout life, it is not without reason that some scientists maintain that the conditions of upbringing strongly affect them already in early childhood.

Finally, one cannot disregard the fact that the structure of all human emotional and mental properties is extremely complex, and that their actual manifestation is invariably the result of interaction of many components. Jean-Jacques Rousseau had already noted: "Whatever moralists may say, human intelligence owes much to the passions, which also owe much to it, as is generally recognised."<sup>16</sup>

It would be wrong to assume that human mentality and behaviour are the exclusive function of the brain's autonomous activity. They are determined by environmental conditions, which directly affect human behaviour, and by purely somatic organisation and physiological state, which leave their mark on the more complex workings of behaviour and mentality.

All these components, which in turn develop under the control of polygenic systems and depend to one extent or another on man's individual life conditions, create a very dynamic basis for mental activity, representing a highly complex and multi-component process. From this angle, the division, albeit conventional, of mentality into substantial and dynamic components, which some authors accept, would hardly be justified. In its historical and individual development, human mentality forms as a biosocial category, and as such it is devoid of any dualistic foundation.

In spite of all the limitations and shortcomings of techniques of genetic analysis of human mental and emotional properties, genetics is gradually accumulating experimental evidence permitting, without going into particulars, to view the problem from general positions. In most cases, this evidence was obtained by comparative study of monozygotic and dizygotic twins or non-twins (siblings) brought up in similar or different conditions. The twin method permits assessing the share of genetic and environmental variations in the overall variation of the feature or property. The share of genetic variation in the overall variation has been termed the *heritability coefficient* ( $h^2$ ); it should be emphasised that this parameter characterises only the source of feature variation in a specific group of individuals; however, it tells nothing of the genetic determination of the potentiality, i.e., of the level of abilities of a specific human being.

Numerous investigations by means of the twin method are devoted to the study of intellect and the genetic component in the variation of intellectual capabilities, expressed by IQ. Its value is estimated by special tests, which do not require any special training or knowledge from the subjects. So far, the most exhaustive and

informative data on genetic determination of intelligence by IQ is available in a rather old paper by L. Erlenmeyer-Kimling and L. Iarvik, who summarised evidence obtained by over fifty investigators who had calculated approximately 30,000 correlations.<sup>17</sup> Actually, the data of these studies unambiguously confirmed a very strong influence of heredity on IQ variability.

Subsequent studies generally confirmed the conclusions of the above authors. For instance, Lee Willerman<sup>18</sup> cites materials of a genetical-statistical study of the intellectual level in children to conclude that only about 20 per cent of all IQ variability involved environmental conditions, 39 per cent additive genes, 10 per cent dominant genes, 9 per cent genotype-environment interaction, and 22 per cent unaccounted factors.

Soviet scholars obtained similar results. For instance, having examined 57 pairs of monozygotic and 61 pairs of dizygotic twins from 7 to 16, N. Kontonistova<sup>19</sup> discovered the genotypical variability of the intellect to be chiefly (55-60 per cent) determined by the genetic component, the structure of which is principally dominated by additive genes, environmental variability being mainly caused by intrafamily factors.

The list of such works could be greatly enlarged, but this would add nothing basically new to the above-cited data. IQ variability is under considerable genetic control, even though with age the share of environmental effect may increase, especially if it strongly varies. Quite understandably, in different investigations the authors find different IQ values; yet even the minimum value revealed through a non-verbal test was at least 0.3.<sup>20</sup>

In evaluating all these data, one must of course clearly understand that IQ, which characterises the subject's ability to solve particular problems in a given moment reflects only certain mental aspects. On the other hand, if one understands intellect as the integral factor of human creative and moral potential, then IQ naturally does not characterise the former. Numerous properties, not only emotional and mental, but anatomical and physiological, are involved in any form of creative, i.e., intellectual, activity, and this determines the tremendous complexity of the integral factor of the human spirit.

Relevant literature contains substantial evidence on hereditary determination of the many different properties of human mentality and behaviour, or of individual objectively established properties of the brain. In a detailed review, N. Artobolevskaya, R. Mairamyan and V. Efroimson<sup>21</sup> summarised their analytical data on the characteristics of intellect components (verbal comprehension; spatial perception; calculating, thinking and speaking abilities), specific talent (musical and mathematical), and the general character of behaviour and temperament.

Various volumes of collected articles or monographic reviews published outside the USSR also contain much data on the genetic determination of man.

In recent years Soviet experimental studies on human psychic characteristics have also increased. With regard to this, the works of the Institute of Psychology, USSR Academy of Sciences, are of major interest. They show the role of the genetic component in determining a number of properties of the nervous system and psyche of man: strength and sensibility of the nervous system, mobility of nervous processes, and some liability factors in the nervous system. It is most interesting to note that certain parameters of human electroencephalograms (EEG), for instance the  $\alpha$ -rhythm, which reflects the state of the common properties of the brain as the basis for realising its activity, were found to be under substantial genetic control. It was also discovered that the EEG characteristic in various brain sections controlling different aspects of neuro-psychic activity is also subject to genetic control.<sup>22</sup>

From the above facts and many others, several basically important conclusions may be drawn.

Firstly, like the norms and forms of individual response to the many kinds of external stimuli and irritants, including those determined by the social environment, numerous properties of the human nervous system and psyche determining the type of higher nervous activity; the features and properties of individual behaviour; and specific personal interests and inclinations, are to one extent or another determined by heredity. Hence, when born, people already differ in their potential properties and possibilities, i.e., in their natural capabilities. The degree of inequality varies but it is an objectively existing fact of tremendous social significance.

Secondly, virtually all the psychic and behavioural properties in healthy people are greatly labile and susceptible to training; therefore under the influence of a definite education and social environment with the same hereditary basis, these properties may develop to different levels, both in quantity and quality.

The brain is tremendously flexible and trainable, which excludes the fatal significance of genetic programmes; hence, one cannot simply think that the presence of given inborn potentialities rigidly, and with fatal inevitability, determine the quality of man. As there are no special genes of, say, humanism or altruism, or of anti-social behaviour, this is easy to understand. Yet there are genetically determined mental properties, whose combination refracting through definite social conditions, promotes the moulding of either a man with a high sense of conscience, a man who is opposed not only to criminal activity, but to careerism and grabbing, or of one who has a poor understanding of conscience and whose behaviour involves all the ensuing negative consequences.



The strictness of hereditary determination in men differs; hence, the possibilities of upbringing do too. Nevertheless they are very broad, and numerous examples of them are universally known. The role of social education is especially powerful. Social ideals are decisive in moulding people's social aspirations and behavioural norms both in the course of work and in society in general. The nobleness and genuine humanism of the ideals of a socialist society and their conversion into reality are the principal educational factors; yet they do not level off people's varying hereditary qualities.

Despite the fact that society and its institutes play a major role in the moulding of man, he himself—his will, intrinsic purposefulness, efficiency, and ability to withstand hardships and adversities—largely determines his own fate. Indeed, what was the society, the social environment and social ideals that induced Mikhail Lomonosov in the early 1700s to leave his remote village in the north for Moscow in quest of an education? What helped him, already an overgrown youth, to study at the Slavonic-Greek-Latin Academy in spite of all the hunger and cold and the mockeries of his classmates? Actually, the social determination of the feat of this great Russian was rather negative. But his great spirit, clearness of purpose, and enormous capacity for work together with brilliant capabilities for acquiring knowledge crushed all obstacles to bring him to the top of world fame.

And today, too, when our society is doing everything possible to develop all the natural capacities of men, one can neither forget, nor moreover ignore, the intrinsic possibilities of man himself for self-education and self-development. The fact that people have inherited different qualities and possess different inclinations and motives confronts society with the difficult task of working out measures and programmes for bringing up and educating people in a non-standard way. These concerns are fully justified, however, since with the great variety of professions which presently exist every person with varying genetic determination of his individual properties, and with adequate conditions of life, training and upbringing, can attain a high degree of social, professional and moral perfection.

As was already noted above, the question of whether natural inclinations that govern people's differing behaviour and mental abilities do or do not exist has long been a subject of discourse; Soviet investigators have also taken part, and some maintain that a hereditarily acquired difference in personal qualities does not affect the higher manifestations of human psyche, behaviour and emotional faculties.

The distinctive feature of *Homo sapiens* is essentially his spiritual, intellectual and creative abilities, i.e., inborn human potentials. Using

this wealth, humanity, developing according to particular social laws, is heading along the road of social progress.

#### NOTES

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## Socio-Ethical and Humanistic Problems of Contemporary Science

**IVAN FROLOV**

Along with other key factors of our age, in which the very existence of civilisation is threatened, science is being subjected to the judgement of mankind. A humanistic and moral appraisal of its role and importance in the life of man and mankind is part of the anxiety we feel as we approach the third millennium.

There is no need to deal with such well-known things as the tremendous growth of the role of science, particularly in production. And it is generally accepted that the scientific and technological revolution has made science practically the chief productive force of our time. Itself a special social institution, science is now greatly dependent on the system in which it functions, socialism or capitalism. Science has become a massive and collective force both in terms of organisation and in methods of research, which often call for the concentration of vast material and human resources.

That is one aspect of the problem. Another, and more important one, is that by causing substantial changes in material production, science itself becomes a decisive factor of social change and the spread of education and culture. And in this sense science is a force facilitating the development of man, his inherent talents and creative capabilities. But, as Marx once remarked, in an antagonistic class society even the pure light of science can shine only against a background of ignorance. This finds expression, in particular, in the fact that contemporary science has little or no meaning for the bulk of the population, including that of many industrialised countries. We cannot be blind to the fact that in many cases it is not narrowing, but widening the "human gap". For instance, in 1979 alone, 50 million people died of hunger; 900 million were illiterate.

While promoting the growth of knowledge, Western science increases man's alienation which has already assumed menacing forms. This finds expression, among other things, in the fact that mass "scientific output" produces the same "partial worker" as does large-scale industry. But the most important thing is that science is made to serve militarism and in this way contributes to the murderous arms race that is driving the world to the brink of thermonuclear catastrophe. One cannot, therefore, seriously discuss the socio-ethical aspects of science and its humanistic problems without taking into account, for instance, these figures: 25 per cent of the world's scientific workers (according to UN statistics) are engaged in military-related activities, and 40 per cent of all expenditure on research and development is used for military purposes.

That, I think, explains not only the disillusionment in science, but also the fear of science. For it is fraught not only with benefits, but also with incalculable calamities. Indeed, it is alleged that the situation (some even speak of crisis) in science affects its social and philosophical foundation and orientation. However, let us focus on the two following processes which (so far as tendencies) are hewing a way for themselves in the social and philosophical thinking of the scientific community and indicate, I think, that the crisis can be overcome.

First, science as a special form of human activity is today striving to reunite with the direct subject of its activity, man. This finds expression, above all, in the fact that from a socially alienated concept it is more and more becoming a humanly measurable one, i.e., related to human properties and needs. And this is being achieved through enhancement of man's role as the subject of scientific activity (though the efficiency of technical instruments of cognition is constantly growing, they do not have the "demoniacal" significance ascribed to them in the early stages of the scientific and technological revolution).

Besides, science is exerting an ever more tangible influence not only on the life of society, but also on the life of the individual, substantially changing it in conformity with the qualitatively new standards and structures. Of major importance, too, is the fact that man, in the unity of his social and biological properties, is becoming a basic object of scientific research, both in the natural and the social sciences. The need to take into account human specifics and conditions of research has found expression in methodological rules and bans even in such seemingly neutral means of cognition as experiments.

All this makes science even more dependent on society. In other words, science is becoming "sociologised". But the link between science and society is, at the same time, being individualised,

acquiring a more personal character and shedding much of its anonymous alienating forms.

On the other hand, this tendency towards "sociologisation" and "humanisation" of contemporary science reflects more general processes stemming from the need for socio-ethical and humanistic regulation of science, its supervision on a national, regional and—especially important—global scale. Of course, these tendencies are differently understood and differently expressed under capitalism and under socialism. And their intrinsically contradictory character explains more than anything else the peculiarities of the development of science. Reference is not, of course, only to the institutionalised implementation of supervision and management, but also to the socially significant operation of socio-ethical and humanistic principles that perform a regulatory role by reacting on the scientist's consciousness and ethics. Philosophically, this is a world-view—scientific and valuational—orientation of science. And it is in this that we find the new, often manifested in the direct opposite of what science and society have so far been accustomed to.

The new situation should be seen in the context of a number of internal changes in science itself (particularly in methodology—the rejection of neopositivist principles and orientations that hamstring scientific advancement), and also in the new understanding of the place and role of science in the system of contemporary culture. The latter tendency is most clearly expressed in the critique of scientism and absolutisation of the technical approach to solution of fundamental problems.

This has been described by Charles Snow as the alternative to the "two cultures", scientifico-technical and artistic-humanitarian. In this country the controversy has come to be known as between the "physicists" and "lyricists". It has shown up the excessive claims by scientism and its extreme form, technicism. But it has also shown the need for the organic development of culture as a whole, including its humanitarian aspects and, more especially, the need to develop the *science of man* in his social and individual parameters. The latter is becoming the central consideration, for not only adherents of scientism, but also of crude technicism show, at least externally, an interest in art and politics as hobbies.

The intricate connections and relations of present-day society lay a definite imprint on many problems of the natural sciences, which are acquiring new parameters and scope, but also new qualities. This finds expression, for instance, in the so-called global problems, which, in the course of development, have disclosed the inadequacy of scientifico-technological decisions taken out of their broader philosophical context and abstracted from the social and humanistic aspects of the problem in hand.

But whereas Marxist thought has from the very outset drawn attention to this and, backed by classical traditions, began, especially in the 1960s and 1970s, intensive development of comprehensive approaches, including analysis of global problems, schools of thought unrelated to these traditions have so far completely ignored a comprehensive approach, or have adopted the contradictory method of trial and error. One has only to consider the evolution of the views and methodological orientations of the Club of Rome, in its interpretation and solutions of global problems.

It will be recalled that early reports to the Club of Rome centred on the scientific and technological aspects of global problems. Subsequently, however, the centre was shifted to social and human factors, though interpreted in a very abstract way, in particular without due account of the essential features and advantages of socialism compared with capitalism. The latest book by the Club's president, Aurelio Peccei, *The Human Quality*, and the report "No Limits to Learning"<sup>1</sup> reveal a clear anthropological bias, and in contrast to scientism the accent now is on the change of man as the precondition and basis for all other (including social) changes. This, of course, is a one-sided approach, too, which does not, in my view, add to the reality of the programmes set out in reports to the Club of Rome.

However, Marxists can accept as correct many of their anti-scientistic and anti-technistic ideas. For instance, their stress on the need for an urgent study of the "human element" in global problems, noting, in this context, the spreading disappointment in the omnipotence of technology and the scepticism generated by solutions focused on science and technology, but disregarding their influence on man. The need, therefore, is to make technology serve the people, not the other way around.

How is this to be achieved? Unfortunately, the authors of the report "No Limits to Learning" see only one way, essentially through enlightenment: teaching (in the broad sense of the word, including not only education but also training), in particular, by instilling in the individual an "innovative" element and cultivating the ability to forecast events (chiefly difficulties that are bound to crop up in future). They lay much stress on the principle of participation, i.e., cooperation in decision-making, dialogue and emotional involvement. This leads the authors to the conclusion that *values* are the most important element of "innovative learning". Citing the results of the 16th World Congress of Philosophy (Düsseldorf, 1978), they have come out against neo-positivist attempts to separate value-judgements from science. In their view scientific rationality must be treated in close contact with values, and this applies also to politics, strategy, programmes and goals.

Without going into the different (often contradictory) philosophical definitions of the concept of value, their origins and development in Western axiology, I shall be guided by the definition generally accepted by Marxists, namely, that value is a peculiar form of the manifestation of relations between the subject and the object, with the properties of the object evaluated by the degree to which they satisfy the requirements of the subject. Reference, of course, is to the requirements of the social subject, requirements created by society and, consequently, evaluation of material or ideal phenomena becomes a social function enabling the individual freely (on the basis of cognised regularities) to find his bearings in the world and repattern it through its creative activity. And inasmuch as human endeavour is always purposive, it has certain axiological qualities, because in the process of man's activity there is materialised what *ought to be* in conformity with the goal set. Evaluation of one or another emergent phenomenon via the goal (a relation of purposefulness) brings us nearest of all, perhaps, to the unity—all the differences notwithstanding—between the value-oriented and scientific approaches in which the goal-oriented approach is an effective method of cognition.

Marx demonstrated this by characterising the specific nature of man's practical labour towards the attainment of a definite goal as a law that determines the mode and character of his actions. "In creating an *objective world* by his practical activity, in *working-up* inorganic nature, man proves himself a conscious species being... man produces even when he is free from physical need and only truly produces in freedom therefrom. ...Man knows how to produce in accordance with the standard of every species, and knows how to apply everywhere the inherent standard to the object. Man therefore also forms things in accordance with the laws of beauty."<sup>2</sup>

That is the Marxist approach to scientific activity, too. Accordingly, in Marxist axiology values, far from being separate from scientific knowledge, are treated in insoluble contact and interaction with it. The fundamental principle of scientific cognition, its objective truth, is organically combined with the existence of value relations both within scientific knowledge, which represents the achievement of a definite goal, truth, by appropriate means, and on the part of society, which correlates science as a whole, understood as a specific human means of orienting man in the world with its goals, which act as utilitarian and practical normative or ideal criteria achieved through this evaluation.

By regarding scientific cognition and science as a whole from this standpoint, we place science in an object-subject relationship and bring it into our methodological analysis in the course of which we

establish the correspondence of knowledge to reality. It would be superfluous to mention everything that applies to the characteristic of truth in this context. In examining, for instance, Lenin's definition of objective truth as the content of human ideas "that does not depend on a subject, that does not depend either on a human being or on humanity".<sup>3</sup> And yet, "What is truth?" That question arises not only in its evangelistic interpretation, which has a certain basis, but also in the meaning we associate with axiological relations. Let us recall Hegel, who spoke of man's bold quests for the truth, his faith in the power of reason as the prime condition for scientific (for Hegel, philosophical) activity. And Hegel emphasised: "Man must respect himself, consider himself worthy of the highest praise... The hidden essence of the Universe does not possess a force capable of effectively resisting a bold quest for knowledge, it must open itself to man, present to his view the wealth and depth of its nature and enable him to enjoy them."<sup>4</sup> It will thus be seen that cognition and values organically interact, inasmuch as both find their expression through the creative essence of man. Let us recall also, in this context, the "lenient" but very interesting definition given by Dostoyevsky: "...Truth is more poetical than everything in the world, especially in its pure form."<sup>5</sup>

Value judgements pertaining to the logical structure of knowledge, the axiological basis of methodological norms and relations within the scientific community, are equally applicable not only to social and humanitarian sciences, to which they are intrinsic, but also to the natural sciences. And in this sense we can say that no science is free of values. On the other hand, the fact that cognitive activity is axiologically oriented, does not deprive the content of knowledge of its objectivity. This does not, of course, mean that in each individual case the value approach, particularly in the logical structure of knowledge and its methodology, performs only a constructive function. Its destructive role in science has led (and still does) to the emergence of all manner of pseudo-scientific or anti-scientific constructs. This prompted Marx to declare that "when a man seeks to *accommodate* science to a viewpoint which is derived not from science itself (however erroneous it may be) but from *outside, from alien, external interests*, then I call him '*base*'".<sup>6</sup>

Marx thus evaluates 'behaviour *within* the scientific community depending on observance (or non-observance) in cognitive activity of methodological norms manifested here in the form of definite values, chief among which is the *quest for truth*.

It is important to note that the criterion of objective truth extends, in a sense, to value judgements relating not only to the logical structure of knowledge and the axiological basis of its methodological norms, but also to the philosophical, ideological

direction, to the understanding of the overall goals and the appropriate means of scientific cognition.

In repudiating relativist approaches, we orientate ourselves on the dialectico-materialist understanding of objective truth, the relation of its relative and absolute aspects. For, as Lenin emphasised, truth appears to us as a kind of "measure or model to which our relative knowledge approximates".<sup>7</sup> Characteristically, Lenin uses in this case the concepts of "measure" and "model" which clearly denote the methodologically normative (and in this sense the axiological) character of objective truth. This is further stressed by Lenin's insistence that "truth is a process".<sup>8</sup>

From all this follows that, without obliterating the qualitative difference between the cognition of truth and the value-judgement approach, we can extend to the latter some characteristics of objective truth relating, in particular, to the dialectic of its relative and absolute aspects. In this way we come to the acceptance not only of relative values, but also of absolute, universal values that act as a kind of "measure", "model", etc. In examining value relations in terms of their methodological significance, this can, I think, provide reliable criteria for distinguishing real science from pseudo-science and anti-scientific constructs.

Science relies on a series of methodologico-normative values which in many cases are of absolute, universal significance (general principles and laws of cognitive activity—observation, experiment, deduction, etc.), so that relativism can only erode the criteria of the objective truth of knowledge and bring us back to subjectivism. On the other hand, *developing* cognition injects elements of relativity in truth as a process, and here violation of the principle of relativity can only ossify thought, open the way to dogmatism, authoritarianism and substitute for research the opinion of one or another outstanding individual, recognised, at the given point in history, as its expositor. It is on such deviations from the harmonious unity of cognition and value that pseudo-science and anti-science thrive. They have always violated the principles of the objective value of knowledge which led to the domination of falsely understood values or the flat negation of all values. True, in our time this is never done openly, and we can judge the falsity of one or another evaluated theory only by objectively relating it to the end result of the process to which it gives cover.

There have been many such cases in the history of science. We can recall, for instance, the pseudo-scientific and anti-scientific attempts to refute the theory of relativity, cybernetics and, in genetics, even create a special doctrine of heredity and its permutations—"materialistic-dialectical" as a counterweight to "idealistic-metaphysical". This was accompanied not only by attempts to erase the borderline between truth and untruth in science, but also to

switch their places. Furthermore, philosophically-oriented value propositions were so distorted that they became pseudo-dialectical, aprioristic and dogmatic, thus providing a nutritive medium for anti-dialectical conclusions.

Distortion of value relations in any science leads to the deformation of these values and the value of science itself. For value is linked not only with the social status of science, but is determined also by its internal structure. The value of science is manifested in the general context of human activity as a means of attaining socially valuable aims. And linked with this is an evaluation of science in its relation to society and the human personality. But this determines also a more concrete understanding of the meaning and orientation of socio-ethical and humanistic principles (regulators) of scientific cognition. This requires a separate examination in the light of contemporary science.

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And here we have first to note that when we tried to identify some of the general prerequisites for an analysis of the questions we are now approaching, we were dealing with science in general, without its customary division into the fundamental and applied disciplines. The difference between the two disciplines (or sciences) is often determined by ascribing to the former a quest for truth as the supreme value, and to the latter the achievement of predetermined practical goals. In other words, for the fundamental sciences truth is a value in itself, for the applied sciences it plays an instrumental role. The difference is substantive, for it has a bearing on the degree of social autonomy each of the two enjoys, and each should even have its own, qualitatively different system of value relations—social criteria, philosophical orientation, ethical or humanistic principles.

Of course this might suggest that scientific-technicist, pragmatic-utilitarian views stem, in particular, from the applied sciences. That conclusion would, I think, lead us away from an analysis of the problem, or abandon it altogether. But the problem becomes very acute, and has important implications, precisely now, when we can no longer absolutise the difference between the fundamental and applied sciences in their relation to truth and values, and regard them as an integral whole (without, however, overlooking certain differences between them).

For it is science as a whole, as a special social institution, that determines its value as a means of attaining mankind's practical aims. Consequently, this concerns not only the applied but also the fundamental sciences (on the principle that "there is nothing more practical than a good theory"). And let it be emphasised that science

as a whole (and not only its fundamental branches) can fulfil its basic social function only if it is constantly oriented on the quest for truth, proceeds from the objectivity of knowledge as the supreme value, and is not guided by a certain feasible "optimum" within the given conditions, which, some maintain, should be the chief orientation of the applied sciences, including political disciplines. Of course, the accents differ in fundamental and applied disciplines, but most important is what they hold in common that unites them.

This acquires special importance in dealing with the socio-ethical and humanistic principles of scientific knowledge, which in present-day conditions perform a major regulatory function. *Science must serve man*—only that general socio-ethical, humanistic orientation provides, I think, a universal basis for evaluating science from the standpoint of its ability to serve man and subordinate its immanent aim to the general aim of mankind's social development, so that realisation of man's inherent potentialities become an aim in itself. No wonder Marx wrote: "Society, that is, man in all his social relations."<sup>9</sup> While Dostoyevsky remarked that the "law, that is *I*, merges with the law of humanism". Of course, we know that Dostoyevsky (and these views are today shared by many "critics of science") was inclined, like Leo Tolstoy, to regard scientific knowledge (to which he contrasted "wisdom" in its evangelistic understanding) as a force alien to man, a force for which man had to pay a very high price. One need only recall the words of Ivan Karamazov to the effect that the whole world of knowledge is not worth a child's tears, that the whole truth is not worth such a price.

And so, the question arises not only of the *value* of truth, but also of its *price*. And here the "count-down" begins with man, his welfare which, however, has never been accurately defined and has always been of a relative character, acquiring concrete historical content depending on many different (including socio-class) conditions. Nonetheless, man's welfare is a very real universal value and is treated as such today in defining the interests and aims of communism as benefiting (at least in perspective) all the people. In taking this as our premise, we must avoid relativism, for it would undermine the very foundation of humanistic ethics. The choice can not be between the ethical (humane) and the *relatively* ethical (advisable, necessary). This, as Albert Schweitzer so aptly remarked, must in all cases be clearly understood as (at least) a partial *violation* of some fundamental principles of ethics and humanism.<sup>10</sup>

These may seem somewhat general considerations. But they have a very concrete meaning, determined, in particular, by the situation in modern science as it relates to man and society. For today as never before, the question of the *price* mankind should (or should not) pay for one or another truth discovered, in particular, in nuclear physics, molecular biology, etc., that is, in the fundamental rather than the

applied sciences, on which we can impose (as on things technical) the entire load of moral responsibility. And these applied sciences, in turn, can more easily shift the responsibility to society, whose requirements they serve and satisfy, guided solely by the necessity, advisability, "optimal" (effective) and similar considerations.

No one can side-step the problem of *ethical choice*, and only if we regard one or another necessary decision—if it does not coincide with ethical, humanistic norms even to the slightest degree—as a *violation* of these norms (and consequently as an evil, albeit inevitable), only then can we contain the development of negative processes at a definite level and combat them with a clear perspective of success.

In this our position differs not only from ethical relativism and nihilism (scientism), but also from the "critique of science", which, reasoning from Rosseauist positions, would soft-peddle, in particular, scientific and technological progress (such concepts as "counter-culture", "zero growth", etc.). But it should be clear that a deeper, more comprehensive and harmonious development of scientific and technological progress for the benefit of man can "eliminate" the negative consequences of science and its application. This, however, can be achieved only in a social milieu in which man's well-being is the supreme goal.

All these questions are being discussed among scientists and philosophers, chiefly in connection with the concrete problem of the admissibility or non-admissibility of research which, either intrinsically, or as a result of their technical usages, can jeopardise the safety of man and mankind. And nowadays this concerns not only nuclear physics, but also such sciences as molecular biology, genetics, medicine, psychology, and others.<sup>11</sup>

I have had occasion to write on this subject, and I shall therefore only set out some thoughts on the following two questions: first, the so-called dilemma of science and morality and, second, ethical codes for scientists and their interconnection with the general ethical values of mankind.

In the course of the discussion on whether or not (for ethical and humanistic reasons) we should allow certain medical experiments on humans; on the ethical principles of genetic control, genetic engineering, a number of psychological experiments and their application in the behavioural sciences, which could lead to manipulation of the personality, etc., the consensus was that we can not go on flying the "Galileo flag" and be guided solely by the principle "nothing beyond..." (beyond, that is, "pure" research), etc. And it is taken for granted that here modern science abandons the enlightenment understanding of the social and human significance of knowledge in favour of the Kantian "model" which has no direct simple link between knowledge and morality. More, the theory is

being advanced, supposedly in line with European traditions, that the science-morality dilemma is, in the words of G. Stent, the "paradoxical aspect of reason", the complementary nature of which (resulting from the division between object and subject) can only be removed by turning to Oriental philosophy, which makes no distinction between subject and object.<sup>12</sup>

To all this I might add (in answer to Stent) that apparently we sometimes put a long distance between ourselves and the scientific tradition of "enlightenment" and overemphasise that science as such is "neither good nor bad", that everything depends on the social conditions in which it functions, etc.

Of course, there are not only differences between science and morality, but also certain contradictions, for they represent different forms of social consciousness. However, these contradictions are not antinomian in nature. Montaigne was right in saying that a man of good morality may hold false views, and that the truth sometimes comes from the lips of a villain who does not himself believe what he says. However, to accept the full ethic neutrality of science is tantamount to rejecting its prime and fundamental nature as a force that serves man, his well-being and, consequently, is moral and humane by its very nature, and can adequately manifest itself in certain conditions, or be distorted in other, adverse conditions.

Such an approach, which sets an ideal for science, fulfils, I think, an important regulative role. And it can be used for a closer understanding of the socio-ethical and humanistic principles (regulatives) of contemporary science. For this reason we cannot interpret these principles as external to science, operating only at the level of the scientific community or society as a whole. Here, as in studies of the history of science, we should avoid extremes both of internalism and externalism. The ethics of science cannot rest only on the basis of scientific knowledge (i.e., norms on which it relies in its advance to objective truth). It must be based also on regulated conduct of the scientist, with account to his position as a member of the scientific community and of society as a whole. On the other hand, it would be wrong to isolate, still less to counterpose, these two approaches on the plea that there is a dilemma of science and morality. The ethics of science should organically unite them, and here the basis is the Marxist teaching of the unity of scientific knowledge and value judgements, of science as a social institution whose mission is determined by humanistic ideals which, consequently, should prevail also in "pure" research.

This poses one more important question: are scientific ethics self-sufficient, can they fulfil the function of the main regulator of scientific knowledge? This is not an artificial question. For in current discussions, particularly on the ethical aspects of the problems relating to genetic engineering (especially on the question of a

moratorium on research in several of its branches) many Western scientists lay stress on the *self-regulation* of science, confined basically to *moral* obligations and evaluations, and rule out "external control", by which term they mean all manner of state and public regulation of research.

Evidently, we have clearly to establish the following: though the ethics of science assert themselves as a vital condition for the humanistic orientation of research, and mankind has no other alternative, science cannot be regulated at the ethical level, for its ethical self-control ability does not answer all the questions. Moreover, ethical principles cannot be treated in isolation from other forms of science's value orientation, notably its social factors, different (in some cases even contradictory) under capitalism and socialism. Nor can they be divorced from the general ethical and humanistic values, which, too, differ (sometimes direct opposites) under capitalism and socialism. Hence, in a more precise sense we should discuss not merely the ethics of science, but its *sociology* and *ethics* as a single entity, perhaps even as a special scientific discipline.

That determines also our attitude to the possibility and necessity of formulating uniform ethical codes to regulate scientific research in areas affecting the vital interests of this and succeeding generations. And though today there is intensive research in this field, and many interesting suggestions and recommendations have been made, it is my feeling that they are basically of a *stimulative* character. The central problem today, I believe, is to secure more effective control of the operation of accepted socio-ethical and legal rules, codes and agreements.

Socialist society, its philosophy and morality, preclude the spread of scientific views and tendencies or attempts to manipulate man, in total disregard of the ethics of science set out in a number of international codes and agreements. Our society rejects all attempts, supposedly motivated by concern for scientific progress, to jettison all ethical principles and block discussion of science's ethical problems (in particular, social and ethical regulation of genetic engineering) as "harmful" impediments to progress in research.

Scientists of the socialist countries support every suggestion by their progressive colleagues in capitalist countries for effective control by society of research projects in such areas as genetic engineering. That is why we welcome their proposal for a moratorium on some types of such research. We are aware of the limited value and contradictory character of such measures under capitalism. In particular, the idea of achieving the self-regulation of science solely on the basis of moral and ethical principles is utopian. But even this form of protest against the abuse of science should not be rejected out of hand, even if there are facts to show that in some cases the Western business interests that make a handsome profit out of

research use this form of protest for their own ends which, needless to say, have nothing in common with the interests of science or mankind.

In studying the problems of the sociology and ethics of scientific research (especially those pertaining to man and his living conditions), to give them a Marxist interpretation, we take account of what our ideological adversaries are doing in this field. They are at pains to prove that the Marxists are generally "indifferent" because of their "scientistic anti-humanism", disregard of the problems of man, morality, etc. There is also a more general tendency to "complement" science by injecting religious ethical principle which, we are told, are the only reliable guide for the scientist. I have had occasion critically to analyse these views in relation to genetic control, genetic engineering, the views of Catholic theologians, among them P. Ramsay and J. Fletcher. In recent years these problems have attracted the attention of the World Council of Churches, which has done positive work, for instance, in analysing and evaluating the admissibility or non-admissibility of experiments with man.<sup>13</sup> In an effort to resolve the complex axiological (socio-ethical and humanistic) problems of contemporary science (notably the ecology and genetics of man, medicine, genetic engineering, etc.) theological ethicists stress, naturally, the dominant importance of religious moral values. This is evident, to cite one example, from the conference on technology, faith and man's future.<sup>14</sup> Writings by Russian Orthodox theologians likewise maintain that science is but of an instrumental character and hence, because of its restrictiveness, is intrinsically incapable of clearly formulating the moral mission of man in the world.<sup>15</sup> It is from these positions that theologians approach the problems of scientific ethics and the need for ethical control of research.<sup>16</sup>

In examining the socio-ethical and humanistic problems of science, we can determine with sufficient clarity not only the polarisation of scientistic and anti-scientistic approaches, but within the latter we can single out scientific, pseudo-scientific and anti-scientific concepts, realistic propositions and a wide variety of pessimism, alarmism, conformism and utopian optimism.

But from positions of realism we are bound to see not only the difficulties and dangers that will face future generations, but also the positive trends that inspire optimism and hope. These are objective trends, disclosed and developed by Marxism. They spontaneously extend to the whole of contemporary science, but consciously and purposively are realised by the type of science that exists in the socialist countries.

In my view, one of the conditions for successful realisation of the idea of a united science, its values, humanism, its effective socio-ethical, humanistic regulatives, and the shaping of a new type

of science, is unity and interaction of the sciences of nature, society and man.

This dialectical idea belongs to Marxism, but it is spontaneously hewing a way for itself also in the philosophical and methodological interpretations of science unrelated to Marxism, in many cases even hostile to it. The logic of cognition, life itself, are bringing scientists to accept this idea. That can be seen from the proceedings of the annual international conferences on the unity of science. Specifically, this has found expression in an article in *Science* magazine in 1980 by James M. Banner, Jr., Chairman of the American Association for the Advancement of Science. The article deals with the report of the Commission on the Humanities, a project financed by the Rockefeller Foundation, and the role of the humanities in American society.

The report emphasises that the humanities bear the responsibilities towards the sciences, and the scientists must accept reciprocal responsibilities towards the humanities. "Scientists and technicians are deeply concerned about questions raised by their unprecedented success in transforming the human environment, when questions of value, responsibility and freedom can no longer be seen as falling outside the province of scientific activity, dialogue with humanists becomes increasingly important... To be a good scientist, one must be more than a scientific specialist."<sup>17</sup>

The report goes on to say that lest such truths become mere truisms, however, scientists and humanists must accept the deep intellectual affinity between their fields. The sciences, like the humanities, are not merely subjects of study, but ways of pursuing knowledge in its many manifestations. Both, in their distinctive manner have created and revealed the great achievements of the human mind and spirit. It serves no purpose, nor is it accurate, to think otherwise.

And the conclusion is drawn that the sciences and humanities have much in common and should continue their cooperation on behalf of knowledge and understanding. Without joint effort both will suffer. Of course, let us add, hope in itself will not accomplish much. There has to be appropriate action inspired by new ideas, and a new understanding of science and humanism.

The historical Russel-Einstein Manifesto declared: To save life on our planet we, as representatives of the human race, must learn to think in a new way and take practical steps to banish war and the arms drive. That was the beginning of the Pugwash Movement of scientists. In marking its 20th anniversary, Academician M. Markov bluntly asked: "Have we learnt to think in a new way?"<sup>18</sup> There was no simple, straightforward answer to that question, and evidently there is none. There has been a certain forward movement, but many problems remain unsolved and new, more complex and acute



ones, have surfaced. Among them are what we have come to call global problems.

Scientific and technological progress, seen in the context of the development of man and society, is one of these problems. For today we have an increasing globalisation within science itself (as expressed in the interdisciplinary synthesis, interaction and integration of different areas of research), and in the social development of science, including its socio-ethical and humanistic parameters. And here, too, we are faced with the problem of "thinking in a new way". Applied to scientific endeavour, this means learning to think *dialectically* of all the values, including social, ethical and humanistic. It implies transition, on a global scale, to a *new ethos and a new humanism*, expressed theoretically by Marxism and put into practice in the process of building the new (communist) civilisation and its new type of science, so far expressed as a historical tendency and vital need for all of us as "representatives of the human race". Continued development along this path should be seen in relation to changes in the methodology of science and its attitude to practice and to man: this presupposes a structure in which science-value-humanism will represent a dialectical unity.

#### NOTES

- <sup>1</sup> Aurelio Peccei, *The Human Quality*, Oxford, 1977; James W. Botkin, M. Elmandra, M. Malitza, *No Limits to Learning. A Report to the Club of Rome*, Oxford, 1979.
- <sup>2</sup> K. Marx, *Economic and Philosophic Manuscripts of 1844*, Moscow, 1967, pp. 71-72.
- <sup>3</sup> V. I. Lenin, *Collected Works*, Moscow, Vol. 14, p. 122.
- <sup>4</sup> G. Hegel, *Sämtliche Werke*, Leipzig, 1923, Vol. 5, p. LXXVI.
- <sup>5</sup> F. Dostoyevsky, *Complete Works*, Vol. 11, Moscow-Leningrad, 1929, p. 123 (in Russian).
- <sup>6</sup> K. Marx, F. Engels, *Theories of Surplus-Value*, Moscow, 1968, Part II, p. 119.
- <sup>7</sup> V. I. Lenin, *Collected Works*, Vol. 14, p. 137.
- <sup>8</sup> *Ibid.*, Vol. 38, p. 201.
- <sup>9</sup> K. Marx, *Grundrisse der Kritik der politischen Ökonomie, 1857-1858*, Berlin, 1953, p. 600.
- <sup>10</sup> Albert Schweitzer, *Kulture und Ethik*, Munich, 1960, pp. 347-348.
- <sup>11</sup> B. Yudin, "The Ethics of Scientific Research", *Priroda*, No. 10, 1980.
- <sup>12</sup> For more on the subject see I. Frolov, *Life and Knowledge*, Moscow, 1981 (in Russian).
- <sup>13</sup> *Experiments with Man*, Geneva-New York, 1969.
- <sup>14</sup> "Genetics and the Quality of Life", *Study Encounter*, Geneva, No. 1, Vol. X, 1974.
- <sup>15</sup> *Zhurnal Moskovskoi Patriarkhii*, No. 4, 1974, p. 36.
- <sup>16</sup> *Ibid.*, No. 7, 1975, p. 43.
- <sup>17</sup> *Science*, January 2, 1980, pp. 9-11.
- <sup>18</sup> *Voprosy filosofii*, No. 7, 1977.

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## Socialist Economic Integration in the 1980s

YURI SHIRYAEV

Following the principal policy outlined by the 24th and 25th Congresses of the CPSU, the 26th Congress adopted important decisions concerning the expansion and intensification of the USSR's mutually beneficial relations with the socialist states, primarily member countries of the Council for Mutual Economic Assistance (CMEA). The documents of the 26th Congress emphasise the USSR's determination to become more active in socialist economic integration, including long-term target-oriented programmes which underlie the coordinated cooperation development strategy for the 1980s.

The plans outlined by the Congress in this field have a solid foundation laid by the collective efforts of the fraternal countries in previous years. The long-term target-oriented programmes are being translated into reality. The integration is gaining momentum. "The fruits of specialisation in production are visible in practically all branches of the economy, science, and technology. We now have some 120 multilateral and more than 1,000 bilateral agreements to this effect. Coordination of the economic plans of the CMEA countries for 1981-1985 is nearing completion."<sup>1</sup>

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The orientation towards an ever greater intensification of the country's cooperation with the CMEA members is based on an analysis of the results of implementing the Comprehensive Programme of Socialist Economic Integration adopted in 1971. Since then CMEA countries have used the advantages of mutual ties to considerable success in economic and social development.

The chief economic result of the past decade is the increase in the economic, scientific and technical potential of the CMEA countries. The growth in cooperation between the fraternal countries has greatly helped to deepen socialist economic integration and this has also led to the fulfilment of a set of key tasks in social development. Both the methods and content of this cooperation have been enriched and expanded in the last decade.

The last few years were far from being the best for the national economies of some socialist states. Nevertheless CMEA countries managed to maintain economic growth approximately twice as high as the developed capitalist countries. They remain the most dynamically developing group of countries in the world.

In industrial production, the CMEA countries have increased their share of industries on which scientific and technological progress depends: namely mechanical engineering, electronics, and the chemical industry. Most of the countries continued to apply new industrial methods in agriculture. That allowed the fraternal Communist and Workers' Parties in the 1970s to accomplish a number of complicated socio-economic tasks concerned with the raising of the working people's living standards. Real per capita income has increased by more than 50 per cent and housing construction has grown at a highly rapid pace.

Time has showed that socialist integration has become a major foreign-economic factor in developing the community of socialist countries. Integration drew the national economic problems of these countries further into the socialist international division of labour, which in turn increased their international economic cooperation and helped in the coordinated solution of a number of major problems.

Integration greatly helped towards the satisfaction of the import-oriented requirements of CMEA countries in oil, petroleum products, natural gas, iron ore, ferrous alloys, some non-ferrous metals, mineral fertilisers, timber, cellulose, asbestos and other raw materials, machinery and equipment, including agricultural hardware.

The Soviet Union makes the greatest contribution to the supply of fuel, energy and raw-materials to the socialist community. In the current 11th Five-Year Plan period (1981-1985), despite some difficulties connected with complicated conditions of extracting and transporting several important types of energy materials, the USSR intends to increase their exports to other CMEA countries as compared with the 1976-1980 period. It will also provide a considerable amount of iron ore and rolled steel, timber, non-ferrous metals, cotton, chemicals, etc.

Besides this, the 11th Five-Year Plan period will witness a further expansion of the exchange of machines and equipment. This will include those for secondary oil processing, hoisting and transport mechanisms, computers, equipment for the light and food industries.

Reciprocal deliveries of consumer goods will likewise increase.

In the complicated economic situation of the 1970s, socialist economic integration became a factor which actively opposed unfavourable fluctuations in the world market. It became an important stabilising component of the economic and social development of CMEA countries. This positive factor has perhaps manifested itself most graphically in the following two ways.

Firstly, given the aggravated conditions in the world markets, especially the fuel markets, a preferential regime of foreign trade was established within the CMEA framework. This included a system of preferential prices for fuels and other items, guaranteed deliveries in agreed volumes, granting of large preferential credits to fuel-importers to ensure a balanced turnover, and increased purchasing of the produce of processing industries. Raising prices for some of the goods from the less developed CMEA countries (for instance, Cuban sugar, Mongolian animal products), and emergency aid to Vietnam which became the victim of Beijing's barbaric aggression in 1979, became an important element in the preferential regime of mutual contacts. This was accompanied by lower contract prices for fuels than in the world market.

Secondly, in the 1970s, CMEA countries began to develop a coordinated strategy of mutual cooperation. The 1976-1980 period saw the transition of most of the CMEA countries to an intensified type of socialist extended reproduction. The intensification necessitated a search for new forms of integration in the key branches of the economy. In solving that problem, CMEA countries worked out and inaugurated five long-term target-oriented programmes of cooperation aimed at a more rational use of their total economic potential to increase the output of many deficit means of production, to increase agricultural produce and also the output of consumer goods.

According to the Guidelines for the Economic and Social Development of the USSR for 1981-1985 and the Period Ending in 1990, adopted at the 26th Congress of the CPSU, the economic and foreign-trade agencies of the USSR are to continue to realise the long-term target-oriented programmes for cooperation aimed at solving major problems in the development of power engineering, fuel and raw-materials, machine-building, agriculture, transport, and the production of consumer goods. They also include bilateral long-term programmes for specialisation and cooperation in production. Similar decisions have been or are being taken by the Communist and Workers' Parties of other CMEA countries.

The development of atomic energy to solve the fuel problem is one of the main strategic points of collaboration between the socialist countries. For this purpose, according to the corresponding long-term target-oriented programme, production of equipment for

atomic power stations is being organised. European CMEA countries and Cuba plan to build atomic power plants with a total capacity of 37 mln kW, which is equal to an annual fuel supply increase of 70 mln tons of standard fuel. In the 1981-1985 period, the total installed capacity of the atomic power plants is to be doubled, with the USSR rendering technical assistance and other fraternal countries participating in the production of requisite equipment. The capacity growth ensured thereby will exceed one-third of the total present-day electric power potential of the CMEA countries, which will, of course, lead to an important change in their fuel and energy balance.

The 26th Congress of the CPSU has given high priority to the rapid increase of natural gas production in Siberia. Leonid Brezhnev said: "We expect the other interested socialist countries to participate in this project, as, for that matter, in developing the nuclear power industry. This would be of substantial importance to our entire community."<sup>2</sup>

In solving the energy problem, CMEA countries are planning not only to increase the production of primary fuels, but to economise them in all possible ways coupled with rational use. For instance, the long-term programme for fuels and raw materials envisages a set of interconnected measures which are aimed at a fuller satisfaction of the requirements in most of the valuable oil products. This is to be achieved through a more thorough processing of oil making use of jointly manufactured equipment.

The development of the economy greatly depends on fuel and energy conservation and the continued search for better ways of saving energy. This requires adequate machine-building capacity and greater cooperation. Specialisation and cooperation in production internationally has become a major factor in the rapid growth of machine-building, and this will continue as there is a respective long-term programme covering the period till 1990; considerably increased production of up-to-date machinery for key branches of the economy is envisaged together with the introduction of progressive technologies, mechanisation and automation, including the use of the most sophisticated computers.

Relying upon the experience gained in the planned organisation of international specialisation and cooperation in production, CMEA countries concluded a number of large-scale agreements for 1981-1985, including, primarily, the one on producing equipment for the atomic power plants under construction. Nearly 50 industrial amalgamations and enterprises from eight countries will specialise in manufacturing this hardware, and other enterprises will specialise in making specific units and parts.

Atomic power engineering will be supplied by the Soviet Atomash plant, the Skoda amalgamation of Czechoslovakia, the Magdeburg works in the GDR, and the Hungarian Khimmash.

Ten years ago CMEA countries began joint production of new computers. Since then 15 types of computers of the common Ryad system and some 300 types of other computing equipment have been created. A new multilateral agreement provides for a sharp increase in mutual deliveries of microprocessor equipment, to reach the 15 thousand million rubles mark (in terms of value).

Much is to be done to improve international transportation. The long-term programme gives priority to modernisation of transportation and reduction in expenditure. To do this coordinated planning and day-to-day correspondence between foreign-trade organisations, and industrial and transport ministries is becoming ever more important. This will optimise the scheme of export cargo flows and routes to frontier transport centres, with due regard for the interaction of all means of transportation.

In implementing the Comprehensive Programme, the CMEA members have improved the supply of consumer goods and increased the absolute volumes of their reciprocal shipments. Some 10 undertakings are in progress to increase the output of consumer goods, which will help to satisfy the demand for fabrics, clothes, footwear and goods of durable use. Proposals are worked out paving the way for the expansion of existing and creation of new production capacities, for a raise in the technical level of the consumer goods industry on the basis of new technologies and highly productive machinery.

There is also a CMEA programme for cooperation in supplying the light and furniture-manufacturing industries with the necessary machines and equipment. A consistent realisation of all the points of the relevant long-term target-oriented programme will make a great contribution towards ensuring positive changes in consumer goods production.

In the forthcoming decade CMEA countries will have to cope with great tasks in agriculture. Agro-industrial complexes have begun to appear as cooperation has developed on the basis of a synthesis of agriculture and the industries supplying it with machines and fertilisers and also processing agricultural products. The process however has not yet been completed and was not quick enough in the past for a number of objective reasons (difficulties in introducing industrial methods in agriculture, its greater dependence on soil and weather conditions). At the same time it is obvious that the aggregate agro-industrial complex of CMEA countries can, in the long run, fully meet their growing requirements in agricultural products, provided they cooperate on an ever closer basis. The Soviet Union will contribute to the solution of this very important economic problem by implementing the decisions of the 26th CPSU Congress in the field of the further upsurge and qualitative improvements in the agricultural-industrial sphere.

The past decade has shown that the countries of the socialist community have achieved quite a considerable growth in agricultural production. This has been accomplished by using large-scale socialised farming and economic, scientific and technical cooperation. Within the CMEA framework there now exists a certain specialisation in the production and mutual deliveries of large groups of agricultural products. Thus, for instance, Bulgaria, Hungary, Cuba, Mongolia and Rumania specialise in producing agricultural raw materials and food-stuffs and delivering them to Czechoslovakia, the GDR, Poland, and the USSR; the GDR, Rumania and the USSR supply Bulgaria, Cuba, Czechoslovakia, Hungary, Mongolia and Poland with hardware and mineral fertilisers; Bulgaria and the GDR send herbicides and other chemicals to all other CMEA countries, while Czechoslovakia, the GDR, and Poland deliver equipment for food industries to Bulgaria, Hungary, Mongolia and the USSR.

The division of labour in the agricultural-industrial sphere is supplemented by the division of labour within the branches. There are grounds for believing that such a specialisation, which is dictated by the long-term requirements of the countries and based on the specific soil and climatic conditions of each of them, will intensify considerably.

From this point of view the programme for raising the people's living standards outlined in the Guidelines assumes a genuinely international significance. On the one hand, it characterises the USSR's concrete contribution to the solution of the key socio-economic problems common to all the CMEA countries. On the other hand, it envisages a search for new possibilities of developing their cooperation in the rational use of their scientific, technical and production potentials together with their material, financial and labour resources. The end result will be to jointly intensify their economies and create additional sources of production.

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In the years to come CMEA countries will solve problems of a still greater scope and complexity. The 26th CPSU Congress has pointed out that the main task of the 11th Five-Year Plan is to ensure the further improvement of the Soviet people's well-being. This is to be done on the basis of a stable advance of the national economy, accelerated scientific and technological progress and intensified economic development, a more rational use of the country's production potential and maximum economising of all types of resources and a better quality of work.

Proceeding from this provision (which is also distinct in the documents of other fraternal Communist and Workers' Parties), it

seems that in the 1980s, the intensified cooperation of the CMEA countries is to promote, to an ever growing extent, the intensification of social production. The aim of this is to improve the production structures of the national economic complexes and rationally use the aggregate economic, scientific and technical potential of the socialist community.

A closer and more effective scientific and technical cooperation can also promote the acceleration and deepening of the integration. A set of measures is to be realised, aimed at an organic combination of scientific and technical cooperation with international specialisation and cooperation in production, so as to jointly develop and implement new design and technological projects. In 1980, mutual specialised deliveries reached the 25 billion rubles mark as compared to 330 mln rubles in 1970. Under such conditions each decision made in this field is significant. The price of miscalculations as a result of an inadequate technical level or the quality of produce received in the form of specialised and cooperative deliveries grows. All CMEA countries are now doing their best to sharply raise the technical level and quality of deliveries.

It is clear that if this task is to be accomplished, some more effective forms of cooperation should be found, the most promising undertakings should be given priority, and the range of secondary problems should be narrowed. What we need is to use more effectively the programme-target approach which helps choose scientific, technical and production orientations to be given priority and ensure comprehensive and consistent work along those lines, the necessary resources provided, organisational and legal norms laid down, etc.

Under the new conditions, the management of economic sectors, amalgamations and enterprises has an ever greater role to play. Already at the end of the 10th Five-Year Plan period (1976-1980), the trend was to leave the realisation of the long-term target-oriented programmes to sectoral level. Today agreements on specific types of goods which are signed between sectoral managements and economic organisations in accordance with the programmes have assumed a greater importance.

Sectoral cooperation over the next two or three five-year periods should underlie the intensification of international specialisation and cooperation in production. This cooperation makes it possible to coordinate the priorities—the problems and themes of scientific and technical cooperation; to choose items for joint international specialisation and cooperation in production, taking into account the strategic development trends of the sectors and the acceleration of scientific and technological progress; to develop direct links between enterprises and amalgamations. The Guidelines point to the need for improving direct links between sectoral ministries, production amalgamations, enterprises and organisations of the USSR and other CMEA countries.

To ensure a greater efficiency of production, enterprises should show more initiative in developing international cooperation. This presupposes a greater responsibility for the ministries, production associations, enterprises and organisations. They must fulfil their commitments in the field of foreign economic relations, especially mutual commitments as regards the specialisation and cooperation of shipments on account of participation and other integration ties.

Nearly 1,300 Soviet production collectives are maintaining constant relations with some 1,500 enterprises in other socialist countries. Such cooperation, as experience shows, brings about new achievements in production, for it paves the way for the exchanging of experiences in socialist management and conditions for its broad application in all fraternal countries.

Much is to be done to improve the economic mechanism of cooperation, including the consolidation of its organisational and legal foundations. The aim of this is to increase the role of economic treaties and agreements, a fuller use of the potentials of international economic organisations, elaboration of new methods of integrational construction and cooperation in construction, improvement of the methods of preparing and realising agreements covering the entire cycle "science-technology-production-realisation".

An analysis of the tasks defined by the 26th CPSU Congress and outlined by other fraternal parties as well, shows that there are real prospects for substantially increasing the output of many still scarce means of production. This includes a long list of up-to-date machines, instruments, devices, unified assemblies and parts for increasing the scope of agricultural and consumer goods production, all this given a rational and agreed utilisation of the natural and manpower resources, production capacities and scientific and technical potentials at the disposal of socialist community.

A full use of these potentialities will make the economy more balanced, both in individual CMEA countries and in the socialist community as a whole. It will also facilitate improvement in production and the quality of goods, and help to meet the growing requirements of the population. The complete switching of the economies of most of the CMEA countries to the path of intensive development will help towards the build-up of socialist economies in Cuba, Mongolia and Vietnam.

Experience accumulated in implementing the Comprehensive Programme and an analysis of the new tendencies within the socialist community make it possible to state confidently that the new integrational measures in the various sectors of the economy will allow for a still greater consolidation and deepening of the material basis of its members, multilateral and bilateral economic cooperation.

The conclusions and decisions made by the 26th CPSU Congress will undoubtedly give fresh impetus to the socialist integration, to its

effectiveness and mutual profitability. A new task is advanced in this field—that of supplementing the coordination of plans with coordination of the economic policy as a whole. Addressing the Congress Leonid Brezhnev said: "Also being put on the order of the day are such issues as aligning the structures of economic mechanisms, further extending direct ties between ministries, amalgamations, and enterprises participating in cooperation, and establishing joint firms. Other ways of combining our efforts and resources are also possible."<sup>3</sup>

Similar views on all major issues of socio-economic policy and international politics have been established within the socialist community. The CPSU and other fraternal parties are pursuing a policy aimed at an intensified industrial, scientific and technical cooperation between the socialist countries, thus facilitating their further economic integration and a still greater consolidation of the positions of the socialist community in the world economy.

#### NOTES

<sup>1</sup> L. I. Brezhnev, *Report of the Central Committee of the CPSU to the 26th Congress of the Communist Party of the Soviet Union and the Immediate Tasks of the Party in Home and Foreign Policy*, Moscow, 1981, p. 12.

<sup>2</sup> *Ibid.*, p. 68.

<sup>3</sup> *Ibid.*, p. 13.

## Soviet Economic Development Trends

PAVEL IGNATOVSKY

Prospects for the Soviet economy in the current decade are characterised by the impact of the trends that manifested themselves during the 1970s and were conditioned by the growth of social requirements, scientific and technological progress, the intensified socialisation of production, changing conditions of production in the extractive industries, and also the demographic and ecological situations.

These factors influence, first of all, the development of the productive forces of mature socialist society, as well as its production connections, the organisation of production and the results of social labour. This influence is by no means direct and simple, it is dialectical and contradictory, which is objectively connected with the development level of the productive forces. Marx emphasised that "it is superfluous to add that men are not free to choose their productive forces—which are the basis of all their history—for every productive force is an acquired force, the product of former activity".<sup>1</sup> Due to that continuity the development level of the productive forces reached during the 1970s largely predetermines the prospects of the economic growth of the USSR during the 1980s.

The specific features of the Soviet economic progress have not been introduced from outside; they are a derivative from the development processes of the productive forces, the trend of all production which is aimed at satisfying the constantly growing requirements of society and its members. "Concrete concern for the concrete person, for his needs and requirements is the alpha and omega of the Party's economic policy," says the Report of the Central Committee of the CPSU to the 26th Congress of the Communist Party of the Soviet Union.<sup>2</sup>

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As can be seen from the "Guidelines for the Economic and Social Development of the USSR for 1981-1985 and the Period Ending in 1990" endorsed by the 26th Congress of the CPSU, the major objective development trend of the Soviet economy lies in a much more active and consistent intensification of all social production than ever before. This calls for the need to correct the structure of the productive forces so that it will more efficiently contribute to economic growth and the utilisation of the accumulated production potential.

Such utilisation presupposes the qualitative improvement of both the potential itself and its compositional characteristics, especially proportions between the instruments and objects of labour, between all means of production and workforce. That is why the intensification of production determines also the need to improve the structure of capital investments. In economic policy this means, above all, a change in the approach to their distribution.

The approach to the distribution of capital investments which has been exercised as a result of applying extensive methods of economic management, when the main thing for ensuring a surplus output was to receive additional means for expanding production or building new enterprise, is no longer acceptable. Solution of relevant problems requires an account of the raw-material and labour resources as well as production capacities both at operating enterprises and on construction sites of new projects, in the eastern regions of the country, for one.

These conditions call for such priority order of implementing economic measures in the intensification of production, under which society's efforts aimed at the development and utilisation of the productive forces are determined, first of all, by the availability of the material and labour resources and their use, taking due account of the character of personal and social requirements. This is why the results of economic policy largely depend on the degree in which the pressing need of changes in the structure of the productive forces is understood. Unfortunately, however, the tasks of the national economic policy are not always fully reflected in economic practice.

Assessing the impact of the latter on the structure of the productive forces, it should be borne in mind that the state of the material and labour resources at a given moment determines, now to a greater degree than before, the possibilities of economic growth and, consequently, the country's requirements.

At the present stage the intensified social production requires a development of the productive forces which is connected with the need to take stricter account of material resources in planning. Improvement in the qualitative indices of the production potential

determined by the technical level of the accumulated productive assets and applied technologies and intra- and inter-sectoral proportions becomes a central problem. All this requires more thoroughly substantiated economic decisions on channelling capital investments for purposes connected with improving production capacities in operation and creating new ones and with providing the national economy with fuel, energy and raw-material resources.

Experience has shown that the prevalence of the tendency to build new enterprises, with insufficient concentration of capital investments and a great volume of uncompleted construction, considerably "burdens" the structure of the economy, retards intensification processes of production and has a negative impact on economic growth rates and the satisfying of society's requirements. The needs of the population and of the national economy are increasing, and if the possibilities of their satisfaction are artificially restricted by "freezing" a considerable mass of material means, this is accompanied by the narrowing of the possibilities of extended socialist reproduction and, consequently, the accumulation and increase of capital investments. To block the dissipation of resources and step up the construction of projects scheduled for commissioning means to expand the possibilities of the growth of capital investments.

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At the current stage, the growing volume of capital investments in the technical readjustment and modernisation of economic sectors and individual enterprises is an essential factor in raising the quality of the operating production apparatus. Modernisation and technical re-equipment, as it follows from the *Guidelines*, become an important factor of scientific and technological progress. They have to be implemented on all the wider scale the more actively the intensification processes of the national economy proceed. This is why it is not accidental that precisely now, with a considerably higher technical level of Soviet social production, does the scope of modernisation expand.

The specific feature of modernisation lies in the fact that it has an impact on the intensification of production at an enterprise supplying the means of production, that is, in the "focus" of the renewal of productive assets, and also in branches consuming machines and equipment produced. Thus, intensification is going on of not only an operating industry, but also of the process of its technical re-equipment. Of great importance is the ensuring of the continuity of modernisation by means of consistent planning of corresponding measures within the bounds of the given sector at all operating enterprises.

Of course, the scale of and deadlines for modernisation in each region differ and depend on the mechanisation and automation level of production processes, as well as the wear and tear of machines and equipment. But the state planning of modernisation and re-equipment of enterprises and provision of resources for these processes have to ensure their implementation within the calculated optimum time-limits.

An important role in the acceleration of technical progress, the creation of new real requisites of economic growth, an increase in labour productivity and solution of social problems is played by the ratio between capital investments in modernisation and in new construction. We have in mind a problem "permeated" with contradictions engendered by both the objective conditions of economic management and, to some extent, the subjective attitude of individual departments and enterprise managers. The point is that to effect re-equipment of production without stopping the production of old goods is a complex matter requiring a great deal of effort, a well organised material supply, deliveries of new equipment, a rapid commissioning of additional space and an optimum combination of the interests of current production with the requirements of timely modernisation.

From this follows the ratio between new construction and modernisation both in the structure of capital investments and in the distribution of material resources for the extended reproduction of the basic assets. An effective management of this process requires exact information about the volume and share of capital investments channelled to modernisation, and also to the expansion of production connected with it.

In solving the problem of regulating the ratio between capital investments and the distribution of material and labour resources for the modernisation of production and new construction, the principal role is played by the state and its central bodies. This is a manifestation of the principle of democratic centralism in the economy, and its implementation through a state plan. In this the initiative and experience of talented economic executives are widely utilised, people who are capable of tackling, along with current production tasks, complex modernisation problems.

Modernisation is a multifaceted process. At the present stage great significance attaches to the renewal of technology, which entails renewing of some other means of production; this is especially important for such branches determining scientific and technical progress as metallurgy and mechanical engineering.

With the high production level reached the main development trend of ferrous metallurgy is not so much quantitative growth as an improvement in quality and an increase in the assortment of produce. On the quality of metal depends the quality and technical

standard of the machines made out of it, and the quality of operating equipment bears on the quality of the output of metallurgy.

In mechanical engineering, however, the problems of quality cannot be solved simply by renewing technology. New technical approaches, projects and designs are necessary. It is these factors that are the motive force of technical progress in the given sphere, when there is a well operating system of introduction of the latest scientific achievements in industry.

All that requires an improvement in economic relations between science and industry, organisational forms contributing to the strengthening of their ties, as well as concentration of scientific, design and engineering personnel on cardinal new constructive solutions to problems of not only machine-building as a branch, but the national economy as a whole.

In determining the volume and dynamics of production during the 1980s, one will have not only to proceed from production capacities and the technical standard of enterprises, but also to take into account, to a greater extent, the requirements of society, their priorities and the state of material resources and the entire structure of social production. It should be noted that an able manoeuvring with existing resources and production capacities combined with a consistent modernisation of industries and transport, and use of the latest and most progressive world and national achievements in technology, create additional opportunities for solving the economic problems connected with the deficit of capital investments, material resources and workforce. As a result, conditions are created to more fully satisfy the population's requirements, extended reproduction is intensified and the efficiency of the national economy raised.

Consequently, this is a major trend stemming from the specific features of the economy and the system of requirements in the socialist society of the 1980s and having its decisive impact on the utilisation of the accumulated production potential. It is the satisfaction of human needs as the aim of social production conditioned by the basic law of socialism that predetermines the structure of production. Proceeding from that law the state, at each span of the planned period, sets the volume of resources channelled to satisfying this or that requirement, depending on its social significance and the existing possibilities.

This is connected with the fact that the degree of the realisation of the objective advantages of socialism (first of all, these advantages include the scope allotted to the development of social production by the character of production relations) in actual fact depends, at each historical moment, on the state of the material and labour resources. It is precisely the material-labour resource factor, along with the available production capacities, that determines the possibility,

moreover, the necessity of establishing priorities in the system of social requirements and their satisfaction.

In 1950s, the USSR smelted 27.3 million tons of steel, and in 1979—149.1 million tons; it extracted 37.9 and 585.6 million tons of oil (with gas condensate) respectively; gas—5.8 and 406.6 billion cubic metres; coal—261.1 and 718.7 million tons; produced 91.2 and 1,238.2 billion kWh of electric energy, and 1.2 and 22.1 million tons of mineral fertilisers. The USSR has taken first place in the world in mining many kinds of fuel and raw materials, in the production of pig iron, steel, cement, mineral fertilisers, and a number of other indices. Productive assets are increasing all the time and new labour reserves are being drawn into production. "But the final result obtained by us," L. I. Brezhnev noted, "is smaller than it should have been, than is actually possible given our opportunities."<sup>3</sup>

In these conditions economic practice should not be oriented to an increase in the mining of raw materials and an expansion of agricultural production only. Its basic concern is to ensure the maximally efficient utilisation and preservation of raw materials, fuel and other primary commodities, and a curtailment and then complete elimination of losses. In 1978, for example, each third ton of steel was obtained from ferrous metal scrap and waste, and 20 per cent of sulphuric acid—from gas waste at metallurgical and petrochemical plants. At the same time waste at some chemical enterprises containing valuable components is inadequately utilised. The *Guidelines* devote great attention to these problems. The measures envisaged by that document show that a fuller, more rational utilisation of resources is a promising trend of the economy in the 1980s, and it will grow on the basis of the introduction of new waste-free or low-waste technology in industrial production, a broad use of secondary resources and a changed technology of transportation and storing of agricultural products. This trend is an independent line of the intensification of social production. Its economic significance is also determined by a lower natural quality of some types of minerals, especially iron ores. In 1950, about 37 per cent of the iron ore mined had been concentrated, whereas in 1980, the figure was 86.6 per cent. Ore concentration is accompanied by almost doubled capital investments per ton of the ore used. This is not purely an economic problem, but also an ecological one.

In this connection the need to save metal becomes ever more urgent. Metal will be saved by both lowering the share of castings in consumption and restructuring metallurgy with a view to increasing the output of rolled metal. It is essential to emphasise the importance of a special technical policy in metallurgy reorienting this industry to a radical modernisation and technical re-equipment rather than to an increase and the commissioning of new capacities sometimes economically unjustified. Genuinely intensive methods of economic manage-



ment and new technologies should replace the extensive ones. And not only in metallurgy itself, but also in metal-consuming industries, especially at metal-working and engineering enterprises, where, according to the *Guidelines*, the specific expenditures of rolled ferrous metals are to be decreased, on average, by 18 to 20 per cent.

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The economy is not only material resources and labour, the relations of people in the production of material wealth, it is organisation in the broadest sense of the word, including the forms of the functioning of production, the system of production ties, the regulation of these ties and the entire activity in using the production apparatus and resources.

The economy of the 1970s-early 1980s is characterised by essential shifts in the organisation of production—its forms are being improved, production and scientific-production amalgamations are being set up. But to date they have not disclosed all their possibilities, their impact is not big enough on the efficiency of social production and labour productivity, especially in industry and construction. This is a consequence of an inadequate economic substantiation, in a number of cases, of the size of production amalgamations, the concentration of production and division of labour in them.

Quite often, these production amalgamations include only enterprises, their affiliations and design offices which were interconnected before. The production structure of these formations has changed very little. When the concentration level and specialisation of production, as well as technical equipment of an enterprise and the placing of workforce remain the same, changes in the results of economic activity are slight. This is why, as Leonid Brezhnev emphasised, “we do not need just any kind of associations, but those that really raise to a new level the socialist socialisation of production and labour, are based on the latest achievements in science, engineering and technology, ensure the highest productivity and produce the maximum low-cost output.”<sup>4</sup>

At present, when the formation process of production and especially research-production associations is proceeding on an ever greater scale, questions of organisation are coming to the fore. Organisation as a kind of managerial activity is that subjective factor which can be contrasted to such objectively negative factors of the economy as unfavourable weather conditions, depletion of old mineral deposits and the shifting of some centres of the extractive industry to the East and North. These questions are thoroughly dealt with in the *Guidelines*.

The structure and scope of production as well as coordination of the activities of managerial bodies at various levels are the basis of

the organisation of the economy. There is only one possible way, in our view: granting more rights to production units, especially in the sphere of producing consumer goods, to solve questions concerning the nomenclature and assortment of goods, thus relieving the upper echelons of these concerns.

Of great importance for improving organisation of production is the connection of managerial practice with economic policy and the enhancing of the role of state bodies in the responsibility of the managerial apparatus for the implementation of the Communist Party's economic policy.

Of special significance in this context is the economic and technical activities of economic executives, their knowledge and ability to deal competently with the ever more complex situation and react in time and effectively to the shifts in the economy, above all in production technologies, the supply of raw materials, changing demands and, consequently, in the structure of output.

The problem of activity and competence in economic management is connected with the ability to assess the possibility, inevitability and elimination of risk in adopting economic decisions. It presupposes the independence and legal capacity of the economic executive in dealing with material resources sufficient for solution of questions in the interests of successful production.

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The economic trends of the 1980s, while raising demands on people and the economic mechanism, at the same time better adapt the Soviet economy to the changing natural and socio-economic conditions of development and thus expand the country's economic possibilities and its production apparatus. The principal specific feature of the present stage, as it was stated at the 26th CPSU Congress, lies in that the Soviet Union has entered the 1980s with a powerful economic, scientific and technical potential and highly skilled personnel. The achievements reached in economic and social development make it possible to tackle ever greater tasks and concentrate ever greater efforts of the state on the main aim of socialist production—the satisfaction of man's requirements.

#### NOTES

<sup>1</sup> K. Marx, F. Engels, *Selected Works*, Vol. 1, Moscow, 1969, p. 518.

<sup>2</sup> L. I. Brezhnev, *Report of the Central Committee of the CPSU to the 26th Congress of the Communist Party of the Soviet Union and the Immediate Tasks of the Party in Home and Foreign Policy*, Moscow, 1981, p. 87.

<sup>3</sup> L. I. Brezhnev, *Our Course: Peace and Socialism*, Moscow, 1980, p. 97.

<sup>4</sup> *Ibid.*, p. 164.

## Self-Consciousness and Reflection in Scientific Knowledge

VLADISLAV LEKTORSKY

The subject is known to be unable to assess the objective state of affairs in the world without self-consciousness. In case of such a specific and higher type of reflection as knowledge, the subject does not simply know something, but is conscious of the fact that he does know it. In other words, the subject always has a definite *attitude* towards his knowledge and towards himself.

Yet, if that is true, a situation arises which seems to be paradoxical. If I cognise a certain object, can I simultaneously know my own self, the cognoscitive subject, and the act of my own cognition? Does not this signify an acceptance of the tenet that knowledge of an object also presupposes knowledge of the cognoscitive subject and of the act of his cognition, and hence an insoluble logical paradox? A paradox similar to those occurring when statement has its own self as a reference?

K. Gunderson, a modern American philosopher, stresses that the cognoscitive subject cannot be an object of his own experience, an object of his own knowledge. Experience is directed at the world of external objects: I can know the states and relations of physical objects. I come to know other people, too, both at the level of everyday knowledge and by means of special scientific study, e. g., physiology, psychology, sociology, etc. In turn, another subject may study me; I shall be the object of cognition by another subject. Yet, insists Gunderson, I cannot know myself, the subject, as an object of my own experience. Otherwise, he contends, we would be entangled in an insoluble paradox similar to paradoxes from the theory of sets. Gunderson underscores the need to recognise that the subject *per se*,

the carrier and generator of knowledge, "falls out" from the subject-matter to which his knowledge belongs. Yet, there is nothing surprising in this, he further argues, as this involves not only man, but all systems in general (including also artificially developed engineering mechanisms), which obtain information from the environment. Indeed, any such system accumulates data relating to objects which differ from the system itself. Yet, that system cannot obtain information relating to the data accumulation process. The lenses of a periscope reflect everything that takes place around us, but they cannot reflect themselves.<sup>1</sup>

We agree with Gunderson that the situation in which cognition of the world of objects presupposes also cognition by the subject of himself and the process of his own cognition indeed appears to be rather paradoxical. At the same time, we cannot but take into account the real and fundamental fact that human cognition in effect presupposes *self-consciousness*. Gunderson's examples do not contradict this fact. Artificial mechanisms that accumulate data do not implement the process of cognition. Self-consciousness is not inherent in them. But that is actually why they are also unconscious of the world of objects. The information accumulated by these mechanisms becomes a fact of cognition solely when it is mastered by man. A submarine periscope itself sees nothing. It is the man who uses it that sees, and his perception of the external world presupposes a basic act of self-consciousness. Otherwise, he will see nothing even through a periscope (thus, self-consciousness belongs to the individual who uses the periscope, not to the latter).

Where then is the way out of the paradox? In seeking a brief tentative solution, it should be stated that, even though self-consciousness is knowledge, it is essentially specific in nature. It could somewhat conventionally be termed "non-manifest knowledge", unlike manifest knowledge, with which we normally deal. The cognitive process is aimed at obtaining manifest knowledge, and non-manifest knowledge comes out as a means of obtaining the former.

When I touch an object with my hand, I feel the object itself, not my hand. Tactile perception speaks of an external object, not myself, and only in the "background" of consciousness do I experience the act of my own touching and localise the effect of the object upon myself at my fingertips. In case I touch the object with a stick, not my hand, the tactile perception again belongs to the object *per se*, not the stick. The latter no longer enters the focus of consciousness, but is at its periphery and is experienced as a direct continuation of my body. In that case, I sense the effect of the object as already localised at the end of the stick, not my fingertips.

Yet, if we were to agree with the above-said, the following question, discussed in pre-Marxist philosophy, would arise: since, as

philosophers then argued, a major task of theoretical and cognitive analysis is to solve the problem of substantiating knowledge, this analysis should evidently reveal and classify all the premises of knowledge, including those associated with self-consciousness. A theoretical and cognitive study should make all non-manifest events manifest, i.e., achieve an absolutely complete reflection.

A supposed solution of the problem was in contending that the reflective relation of the ego to itself characterises the supreme basic principle of any knowledge (Kant). The judgement formulating this reflective relationship was deemed absolutely unquestionable and undeniable. In this connection, theoretical and cognitive reflection over knowledge was interpreted as reflection of the ego over itself.

Marxist literature provides a sufficiently detailed study of the insolvable difficulties inescapably encountered when the researcher accepts this tenet in the theory of knowledge. For example, Marxists have shown that any knowledge—primarily of the state of affairs in the world of external objects—even though it presupposes self-consciousness of the subject, cannot, in principle, be reduced to reflection of the subject over itself. And since knowledge of external objects can never be absolutely true, natural doubts arise as to the necessity of seeking absolute principles and absolutely unquestionable assertions as the basic principles of knowledge.

Yet, the question still remains: to what measure is absolutely complete reflection possible, and to what degree can premises of knowledge be revealed, clarified and classified?

To answer this question let us refer to W. V. Quine's discourse on the so-called issue of radical translation.<sup>2</sup> Quine focuses his attention on the fact that our native language is assimilated in a different way than an alien tongue we study. In reference to the latter, we ask how its expressions relate to real objects and real situations, i.e., we achieve a reflection over it. As for the vernacular, it directly presents us a picture of the world, not its own structure. We know our native tongue in the sense that we can use it to convey this or that objective content. Yet this is non-manifest knowledge. For our own selves, language is inseparable from the objective knowledge which we receive with its aid; in fact, we in a way do not even notice it, since it is in the "background" of our consciousness. (Naturally, this does not exclude the possibility of reflection over our vernacular. But in that case we would be forced to "split" our native tongue into two: one an objective, studied language, and the other by means of which we study the former and which retains the quality of non-manifest knowledge.)

In investigating the history of various proofs of the stereometric theorem relating to the ratio between the numbers of the sides, apices and facets of a polygon, J. Lakatos showed that an analysis of the proofs invariably assumed the presence of a definite foundational

knowledge—the purpose of the analysis always being to find weak points in the reasoning, i.e., to make it stricter. Foundation of knowledge serves as a means of the analysis *per se*, i.e., as a way of achieving reflection over the proof, and is accepted as an intuitively clear and non-reflexible guarantee of strictness.<sup>3</sup> Thus, even in mathematics, where the problem of substantiating knowledge occupies a serious place and in which reflection over the existing systems of knowledge plays a tremendous role, each procedure of reflective analysis assumes a given framework of non-manifest foundational knowledge, non-reflexible in the given context.

It should be noted that the said peculiarity of reflection involving a dialectic interrelationship of reflexible and non-reflexible knowledge shows in full measure also in relation to the types of knowledge existing in non-objectivised form, i.e., belonging to the individual subject: perception, recollection, etc., and also in relation to individual consciousness itself. Every act of individual cognition presupposes self-consciousness, i.e., non-manifest knowledge by the subject about its own self. One can try and turn this non-manifest knowledge into manifest knowledge, i.e., convert self-consciousness into reflection. In that case, the subject analyses his own experiences, observes the course of his own psychic life, attempts to elucidate the essence of his ego, and so on. It seems that in this act of reflection the ego simply merges with itself. Actually, however, every act of reflection is an act of comprehension, an act of understanding, the latter invariably presupposing definite means of understanding, a certain framework of semantic associations. Beyond that framework reflection is also impossible. At the same time, the semantic framework presupposed by the act of reflection is not reflected in the act itself, but, in "falling out" of it, is taken as its means, i.e., as non-manifest knowledge.

A dismembered flow of psychic life, an essential definiteness of the images emerging in the consciousness, and the spatial and temporal character of recollections—all these are provided to the consciousness in the act of individual reflection. Yet, the methods whereby the given is semantically formulated are non-reflexible. Hence, the process of subjective reflection does not raise the question of the basic possibility of other semantic characteristics of psychic life, i.e., of the possibility of another content and structure of psychic life than those given to the subject in the course of self-observation. The ego itself "falls out", at least partially, from the act of reflection, since, if it makes itself the object of its own reflection, it must itself achieve the act as a subject. Then the ego as the subject of reflection is non-reflexible whilst one remains within the bounds of individual consciousness.

Does this mean that non-reflexible non-manifest knowledge cannot be an object of reflection at all and is forever doomed to be

on the "periphery" of consciousness and, in principle, is not susceptible to analysis? Not in the least. The means of reflection, its semantic framework, can itself become the subject of reflective analysis. However, to that end, it should be comprehended by means of another semantic framework, which in a new context would remain non-reflexible.

Now that non-manifest knowledge turns into manifest knowledge, it becomes an object of reflection to undergo definite changes. Theoretical reflection over a system of objectivised knowledge signifies its dismemberment and formulates a whole series of assumptions and idealisations; at the same time, and this should be stressed in particular, it serves to specify the knowledge *per se*, abandon certain non-manifestly accepted premises (the reflective procedure itself being dictated precisely by the need to revise a number of premises to knowledge). What previously appeared manifest, intuitively conceivable and simple, as a result of reflection proves quite complex and not infrequently problematic; moreover, it is sometimes even erroneous. Hence, the result of reflection is not a set of some simple and self-evident truths, not an aggregate of indisputable assertions coming out as "absolute grounds" of a system of knowledge, to which its different forms can one way or another be reduced. It is rather a theoretical system which is a relatively true reflection of given real dependences in a given context, and which at the same time presupposes a whole series of assumptions, a given non-manifest "premised" knowledge. Thus, reflection results in emergence beyond the bounds of an existing system of knowledge and generates new knowledge, both manifest and non-manifest.

As for factual sciences dealing with empirical facts, the relationship between foundation of knowledge and developing its theoretical content is even more obvious. There, the issue of grounding theoretical premises is usually not formulated independently. Inasmuch as the existing system of theoretical concepts permits resolution of the scientific problems arising within its framework and admits certain practical applications, it is regarded sufficiently well-grounded. The emergence of a basically novel theoretical system and acceptance of new "paradigmatic" premises of research reveals the view that the old paradigm was, with reason, rather erroneous.

At the same time, it should be stressed that the new paradigm is acceptable when investigating real objects themselves, i.e., as a means of a more adequate theoretical reproduction of real dependences, not when analysing the structure of theoretical knowledge and not within the framework of theoretical reflection over science. Yet, acceptance of a new paradigm involves the procedure of correlating it with the old paradigm, which in this case comes out as an object of reflection. Its postulates, concepts and semantic relationships are reconstructed and compared with real objects and actual dependences with a view

to retaining from the old paradigm all objective-real content and eliminating that which has no such content, i.e., proves to be fictitious. The new paradigm comes out as a means for representing real objects and real dependences. Thus, theoretical reflection emerges as an important element in the transition from one paradigm to another (counter to the view of M. Polanyi and T. Kuhn), albeit it does not exhaust the entire content of the given transition. At the same time, it should be noted that the process of the above-said reflection essentially means reconstructing and examining the former paradigm "in the light" and by means of the new paradigm.

Theoretical reflection is simultaneously also the result of emergence beyond the bounds of a given conceptual system and a means of such emergence. Thus, it proves in any case to be inseparably connected with the development of the content of theoretical knowledge.

But then the legitimate question: Is there any sense in the *problem of foundation of knowledge*? In classic philosophy and classic science the solution of the problem of foundation of knowledge was represented as discovery of an aggregate of absolutely unquestionable and stable assertions to which all the other forms and types of knowledge could one way or another be reduced. Since this type of problem cannot be resolved (and in our view it is precisely so), should we not recognise the problem of foundation of knowledge as being altogether non-existent? At present, many Western specialists in mathematics, logic, the methodology and philosophy of science, and the theory and history of natural sciences come to this conclusion.

One can hardly agree with this view. Indeed, what is the sense of the very problem of foundation of knowledge? Apparently in revealing the objective sphere of the applicability of a given system of knowledge, in distinguishing what is real knowledge from what wrongfully claims to hold that status. On the other hand, if the issue of foundation of knowledge stands in a general theoretical-and-cognitive plane, it is necessary to find general criteria for solving the problem, criteria that could be applied to different cases—to various concrete systems of knowledge. If one were to regard that problem as having lost all meaning, then one would conclude that there are no criteria for drawing a boundary between knowledge and ignorance.

In reality, the development of cognition is, in itself, the dialectical process of delimitating knowledge and ignorance—the transition from ignorance to knowledge. At the same time, it is a process of increasingly accurate determination of the objective sphere of applicability of extant systems of knowledge. Foundation of knowledge primarily presupposes correlating it with real objects by way of practical, objective activity. Yet, not all forms of knowledge can be

directly included in practical activity; practice itself is invariably restricted by a given concrete historical level of development. Hence, even availability of practical applications of a given system of knowledge is in no way equivalent to its complete foundation. The process of practice assumes the development of systems of knowledge themselves. Precisely this joint development of interconnected objectively practical and cognitive forms of activity involves the process of foundation of knowledge. Hence, foundation of knowledge should be understood as a *historical process of development of knowledge*, emergence of new theoretical systems, abandonment of certain old concepts, establishment of new associations between theories, reconstruction of old theories. It should not be understood as a certain aggregate of procedures permitting one to definitively provide knowledge with a "stable foundation". To found a given theoretical system means to emerge beyond its bounds, include it in a deeper cognitive synthesis, and examine it in a broader context.

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\* Reflection involves not only emergence beyond the bounds of an existing system of knowledge, but its transformation, due to which some of its premises are either specified or abandoned altogether. In itself, this is quite understandable, as the need in reflection arises when the investigator begins to doubt that the starting premises were sufficiently well-grounded. The task of theoretical analysis is precisely to revise those premises, yet the task cannot be fulfilled without at least a partial change in what is examined critically. Again this means that theoretical reflection causes the object itself to change. Let us now try and examine this important factor in greater detail.

When dependences between real objects existing irrespective of knowledge are reproduced in theoretical knowledge, one is compelled time and again to go beyond the bounds of a given conceptual system, shape new relationships between the examined objects, develop new theoretical concepts, introduce new idealisations, construct new systems of abstract objects, etc. However, all these processes characterising the development of theoretical knowledge about real objects do not change the objects themselves. At the same time, the relationship between reflection and its object is of a different kind. As a result of reflection, its object—the system of knowledge—is not only put in new connections, but is further built up and restructured, i.e., it becomes different from what it was prior to reflection. The process of examination proves to be inseparably linked with the process of creative reconstruction of the examined object itself. This highly unusual relationship between cognition of and changes in the object is explained by the fact that in this case we

deal with cognitive reproduction of cognition *per se* and consciousness, i.e., with reflection of cognition to itself, not with an object existing irrespective of cognition and consciousness.

This peculiar relationship between reflection and its object takes place not only in systems of objectivised knowledge, but also in cases of individual consciousness. Reflection over states of consciousness, over the specific features of the concrete individual ego, occurs in the context of a realised or non-realised task of restructuring the system of consciousness and the individual. When I am aware of myself as an ego with given concrete peculiarities, I objectivise and convert into relatively stable objects some previous fluctuating and "diffused" elements of my psychic life (thereby I introduce definite changes into my consciousness). I also reflexively analyse my own self in the light of this or that ideal of the personality that I had accepted and that expresses a type of attitude towards other people—socially determining my attitude towards myself. When I analyse myself in trying to realise my own specific features, I thereby seek to "substantiate" my own self and consolidate the system of my reference points in life. Thus, my individual ego changes and develops in the course and as a result of reflection.

But does it not follow that reflection simply creates its own object and does not essentially reflect anything? Many contemporary Western philosophers and specialists in the theory of science tend to this view in one way or another.

Let us bear in mind that not every reflection is acceptable by science. If reflection is inseparably linked with development of a system of theoretical knowledge, then only a reflective analysis that promotes the growth and enrichment of knowledge meets the task it faces. In other words, theoretical reflection may restructure its object—the system of scientific knowledge—when the restructuring serves the purpose of revealing conceptual structures that reflect more accurately objective processes reproduced in scientific theory and, at the same time, correspond to objective developmental norms of knowledge. If this condition is not complied with, the reflection is called false, which means that the reflectively recreated image of knowledge and real scientific knowledge itself may fail to coincide. The history of science knows many such examples.

Reflection may fail to coincide with its object also within the framework of individual consciousness. The image of the ego is not always adequate to the actual ego.

Classical pre-Marxist philosophy proceeded from the fact that the subject has a special "intrinsic approach" towards himself and knows himself and of the state of his own consciousness better than anyone else. Unlike knowledge of external objects this subjective reflection was considered perfect and infallible knowledge. I must admit that I really know about myself something that might be unknown to

others. Images of recollections and subjective associations which occur in me when I perceive some object are all mine—directly given to my consciousness. True, many of my individual experiences are usually objectivised and accompanied by external actions. This makes it possible for other people to judge the intrinsic states of my consciousness.

Recall that reflection is also a form of cognition, a process involving not simple passive absorption of data from the environment, but establishment of definite connections, identification of semantic dependences, and interpretation. It is meaningless to speak of errors where there is a simple transfer of information from one system to another (in that case there can only be loss or distortion of information, but no error). But where there is cognition mistakes are possible.

It would appear there can be nothing more certain than the simple statement: "*it hurts*". Normally, however, realisation of one's own pain is connected with its specific location. But this location is occasionally mistaken—something anyone who had a toothache, for instance, knows. When I sense some emotional experience—joy, for example, its reflexive realisation is inseparable from the feeling itself. And this may occur so that, in reality, I am not as glad as it seems to my own self in the act of subjective reflection. However, if I try to reflexively realise the peculiarities of my own personality and comprehend my concrete ego as a whole, there is an increased probability of error. My personality—ego—does not wholly reveal itself in the act of individual reflection. It manifests itself to the fullest extent in my relationships with other people and can be best understood by those very people. A subject observing me from aside can frequently judge my ego better than I myself can. When I realise how others assess me I can judge myself more or less correctly.

We have already noted that, as a special type of cognition, reflection presupposes a definite semantic framework which is not reflected in a given cognitive act. Therefore, when I consider even my absolutely intimate states known solely to me from "inside", I use a system of semantic relations which go beyond the bounds of my individual consciousness and connect me with other subjects. I look upon the subjective states of my consciousness as if through the eyes of someone else. The framework of semantic relationships presupposed by subjective reflection arises in the course of joint interhuman activity and is assimilated by every man in the course of his individual development during communication with other people through man-made objects that bear within themselves the experience of social and cultural development. Reflection in relation to such a highly important element as the reflecting ego itself is possible only when we leave the bounds of individual consciousness to enter another wider and more fundamental system of relations—the

system of interhuman *activity*, the interiorisation of whose standards, strictly speaking, engenders the ego.

Thus, one should seek the sources of the norms and standards of cognition precisely in collective forms of activity. A study of objectivised forms of knowledge and the collective forms of activity engendering them provides an adequate understanding of the cognitive processes performed by the individual.

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So far we said about the far-reaching similarity of objectivised forms of knowledge and those forms of knowledge which are inseparable from the individual subject. Both reflection over objectivised knowledge (tentatively termed objective reflection) and reflection over subjective knowledge inseparable from the individual subject (tentatively termed subjective reflection) reveal basically the same relation to their object.

However, in a series of important points, objectivised knowledge does not resemble the knowledge inherent in the individual. If the individual subject possesses some non-manifest knowledge (say, knows a language he speaks, his ego, and so on), he comes to realise this one way or another, albeit he does not possess that knowledge in dismembered and reflected forms. As for objectivised knowledge, it may also include elements which, at a given moment, are not realised by any single individual subject, including also an architect of some scientific theory or an author of some work of art. This is revealed only in the course of *historical* development of consciousness.

Knowledge, inseparable from the individual subject, is given to him as directly coinciding with its object. In other words, this type of knowledge subjectively comes out as something static and complete. Yet, the objectivised knowledge produced by a scientific study is basically incomplete, since it presupposes the necessity of further research, discussion and assessment of new hypotheses, and so on. This, in turn, is possible only with the division of research and organisation of a special system of scientific communication, namely journal publications, discussions, and other forms of intercourse among investigators. Whereas knowledge inseparable from the individual subject is addressed to him personally, objectivised knowledge is manifestly addressed to all the subjects studying given problems. In other words, the ways of handling objectivised knowledge are essentially collective in nature. Hence, a study of scientific knowledge and relevant cognition are unfeasible without analysing the communication systems functioning in special forms of collectives—scientific communities. The science of science is increasingly tending towards this conclusion.

But does it not then follow that objectivised knowledge is "subjectless" knowledge, i.e., it exists independently of any subject and should be understood irrespective of the latter? Karl R. Popper, a contemporary Western philosopher and methodologist of science, tends to this conclusion.<sup>4</sup> He sharply distinguishes "subjective knowledge", i.e., knowledge inseparably connected with the individual subject, and "objective knowledge"—the content of journals, books, and libraries, expressed in the form of theoretical systems, problems and problematic situations, critical arguments, and specific "discussional states". In this context Popper includes the content in a special sphere of reality which he calls the "third world", a world of objective spirit, and also ascribes to it the content of fiction and works of art. According to Popper, the "third world" exists alongside the "first world", the world of real physical objects, and the "second world", the world of individual consciousnesses.

The "third world" is a product of man, Popper admits. But having been created by man it has become autonomous and independent. At any rate, it is impossible to understand the characteristics and logic of development of the "third world" by proceeding from an analysis of individual human consciousness. Popper maintains it would be more fruitful to take the back way, whereby many important features of individual consciousness could be correctly understood if one were to take into account that it constantly interacts with the independent world of the objective spirit.

Popper is undoubtedly right that individual fragments of objectivised knowledge may not be realised at a given moment by any individual subject, that the laws of the development of that knowledge do not depend on the laws of individual consciousness, and that individual cognition should be understood as "connected" to the world of objectivised knowledge. Popper's criticism of the traditional approach to the theory of knowledge in Western philosophy is also largely justified.

Does it not follow that the world of objectivised knowledge should and can be understood irrespective of the subject?

There are absolutely no grounds for this conclusion. Even though objectivised knowledge and knowledge inherent in the individual subject are not the same thing, both are closely related.

To begin with, only a concrete, individual subject can be the creator of objectivised knowledge. At least at the moment when it emerges, any objectivised knowledge should to some measure be conscious, i.e., belong to a subject. The possibility for a computer to create individual fragments of objectivised knowledge mentioned by Popper does not contradict this. In effect, the results of a computer's activity may be regarded as knowledge only until it is operated by a human being who presets the programme and is able to interpret the

resultant product. No knowledge exists for the computer itself.

Knowledge cannot exist "within itself", absolutely independent of its use in the cognitive activities of concrete people. But it is important that the possibility of its use be preserved, i.e., that it would be possible to include the product in which knowledge is objectivised (even if the product is not involved in the actually performed cognitive process) in social and cultural relations permitting to use it at any moment in the activity of concrete subjects. This means that even the fragments of objectivised knowledge which at a given moment are unconscious still retain a close relationship with those realised and utilised in actual activity. If the relationship between fragments of knowledge involved in the cognitive process and those not involved, but potentially involvable, is severed, the latter cease to represent any knowledge at all.

Cognition is performed by real people, concrete individual subjects. Knowledge, be it in subjective or objective form, exists only when it directly or indirectly is correlated with that activity. At the same time, however, cognitive activity should be regarded in a socio-historical plane, i.e., as activity of interrelated subjects, past, present and future. If any fragments of objectivised knowledge are not at a given moment realised by any of the existing subjects, this does not mean that these fragments are altogether beyond the consciousness of subjects; the latter may belong to subjects of both the past and future (at any rate, relationship to the past is certain, for man alone can produce knowledge).

The socio-historical and collective nature of the cognitive process shows not only that it is implemented through numerous interacting individuals. The interaction itself presupposes the existence of specific laws of collective development of knowledge, laws that differ from those which characterise individual cognition. Thus, the bearer of the collective cognitive process is not the individual subject. Neither is a simple aggregate of individuals. The *collective subject* may be regarded as the bearer, understanding it to be a social system not reduced to a conglomerate of component people.

There is a great number of collective subjects of cognition interrelated by definite relationships. For instance, the study of the functioning of a given paradigm of theoretical cognition presupposes an analysis of a given community, which in that case comes out as the collective subject of a definite type of cognitive activity. Various paradigms apparently determine various relevant collective subjects. At the same time, paradigms are involved in the development of scientific knowledge, a process characterised by common standards and norms. Therefore, a given scientific community is essentially a subsystem of a broader system, viz., a community of all the specialists from a given field of knowledge and a community of all people engaged in research.

In their activity, scientists use some national language which means that they are part of the society of all those speaking this tongue. Thus, this society, comprising also those who are not engaged in research, is likewise a collective subject. The functioning and development of knowledge is determined by processes in a broader social system than a community of scientists. Social sciences are directly related with the social status, interests and practical activities of definite social classes. This means that precisely the latter come out as collective subjects of cognition of social processes. At the same time, the type of social practice characteristic of a given class determines the horizon of cognitive potentials which opens before its representatives. A man not engaged in science also participates in the process of cognition and, hence, is also connected to various collective subjects. Considering not only the diversity but the unity of the socio-historical development of cognition, society as a whole should also be regarded as a collective subject involving a great number of both collective and individual subjects. Precisely the presence of definite relationships between different collective subjects ensures the unity of the cognitive process. The difference between these subjects is responsible for varying understanding of that which should be regarded as cognition.

Complete severance of connections between collective subjects would lead to a disintegration of cognition as a single process achieved by mankind. In that case, society as a whole would cease to be the subject of cognitive activity.

Every individual subject is involved simultaneously in various collective subjects. Various systems of cognitive activity with their standards and norms are integrated in the individual in the form of a given whole. The existence of the latter is an essential condition for the unity of the ego. Severance of connections between various collective subjects, or impossibility for a given individual to integrate within the framework of the systems of cognitive activity belonging to different collective subjects, would lead to a disintegration of the individual subject.

Thus, Marxist-Leninist philosophy emphasises that cognition may be correctly understood only if it is examined in connection with the forms of vital activity of concrete historical subjects, on the basis of a study of the objectively practical and communicative activity of collective and individual subjects.

The individual subject, his consciousness and cognition should be understood with due account of their involvement in various systems of collective practical and cognitive activity. However, this does not mean that the individual subject is somehow dissolved in the collective subject. First, the collective subject *per se* does not exist outside concrete people, real individuals who interact in accord with specific laws of collective activity. Second, even though cognition

inseparable from the individual subject is closely connected with objectivised systems of knowledge and ultimately determined by the latter, it does not coincide with them. The individual features of my own perception are not part of a system of objectivised knowledge, which belongs to all individuals and is included in the structure of the collective subject. This means that the systems of knowledge inherent in individual and collective subjects neither fully coincide, nor interdissolve, but mutually presuppose each other. Thus "epistemology without the cognositive subject" proves impossible.

#### NOTES

<sup>1</sup> K. Gunderson, "Asymmetries and Mind-Body Perplexities", *Minnesota Studies in the Philosophy of Science*, Vol. IV, Minneapolis, 1970.

<sup>2</sup> W. V. Quine, *Word and Object*, New York, 1960, pp. 40-52.

<sup>3</sup> J. Lakatos, *Proofs and Refutations: The Logic of Mathematical Discovery*, London, 1976.

<sup>4</sup> K. R. Popper, *Objective Knowledge: An Evolutionary Approach*, Oxford, 1972.



## Developing Countries: New Research

### The "Interdependence of Nations" and Neocolonialism

MAI VOLKOV

The internationalisation of economic life has become more intensive in the present epoch. Individual national economies are now intertwined, interdependent and connected with a dense network of international economic ties. The material foundation of these objective processes is formed by the deepening international division of labour which is indissolubly linked with the development of the productive forces.

Disclosing the essence of the internationalisation of production, K. Marx and F. Engels wrote in their *Communist Manifesto*: "The bourgeoisie has through its exploitation of the world market given a cosmopolitan character to production and consumption in every country. To the great chagrin of reactionists, it has drawn from under the feet of industry the national ground on which it stood." They noted that "in place of the old local and national seclusion and self-sufficiency, we have intercourse in every direction, universal inter-dependence of nations. And as in material, so also in intellectual production".<sup>1</sup>

In his work *Imperialism, the Highest Stage of Capitalism*, Lenin emphasised that "the growth of internal exchange, and, particularly, of international exchange is a characteristic feature of capitalism".<sup>2</sup> He showed that the export of capital had become typical of imperialism, which was rapidly internationalising production, extending the control of the financial centres of the capitalist world on the entire world economy. "Thus finance capital, literally, one might say, spreads its net over all countries of the world."<sup>3</sup> Lenin analysed the role of international cartels in the division of the world between the

alliances of capitalists and in the further socialisation of production on a global scale. He showed how a special type of combined production emerged within the framework of the colonial empires, which concentrated all stages of the manufacture of some commodity, including the mining and processing of raw materials.

After the Second World War the internationalisation of the economy proceeded with especial intensity. The factors, operated in the epochs of Marx, Engels and Lenin, were supplemented with the scientific and technological revolution. Capitalist economic integration has taken shape organisationally and was implemented. Transnational corporations have become the principal force in the world capitalist economy, and their number has sharply increased.

It goes without saying that scholars adhering to different ideological and political positions interpret differently the picture of modern economic reality and the essence of real international economic relations. They arrive at directly opposite conclusions about the consequences of the objectively developing processes of deepening the international division of labour and the internationalisation of production.

Marxist scholars maintain that the growing internationalisation of production under the domination of capitalist monopolies means the expansion of the system of international exploitation of the newly free countries which have inherited their unequal position in the world capitalist economy from the colonial past. The intensification of the interconnections and interdependence of national economies entails unfavourable consequences for these countries. One of them is a paradoxical phenomenon: the young states' exports are growing parallel with their indebtedness to imperialist powers. The widening economic gap between the states, along with their growing economic ties, is a dialectical result of the internationalisation of production in the world capitalist economy.

At the same time, Marxists regard the growing internationalisation of production as a foundation for an expansion of economic cooperation between countries belonging to different socio-economic systems and the use of that cooperation in the interests of the strengthening of peace and the security of all nations. The programme of actions, the need of which stems from growing world economic ties, was proposed by the Soviet Government in its statement of October 4, 1976, "On the Restructuring of International Economic Relations".

The countries freed from colonial bondage draw their conclusions from expanding international economic relations. In the past, the internationalisation of production proceeded in conditions of the political domination of capitalist countries over the territories they had seized. This is why the Asian, African and Latin American countries are striving to establish a new international economic order,

that is, to get rid of imperialist exploitation, ensure complete sovereignty over their natural resources, put an end to the unbridled domination of transnational corporations and utilise the foreign sources of means for independent and progressive development and for a positive solution of their domestic problems.

References to "interdependence" can be seen in some documents and materials elaborated within the framework of the UN and its specialised agencies. A research paper compiled by the United Nations Industrial Development Organisation stresses that "a new global interdependence in the vital areas of finance, energy, raw materials and technology has developed in recent years between industrialised and developing nations".<sup>4</sup> Practically no document dealing with the problems of organising international economic relations fails to mention this. The idea about the growing interdependence of nations keynotes a report prepared by a commission headed by J. Tinbergen, a Nobel Prize winner.<sup>5</sup> It is also present in a report of the Independent Commission on International Development Issues under the chairmanship of W. Brandt.<sup>6</sup>

Recently, however, the concept of the "interdependence of nations" has frequently been interpreted in a more conservative manner in order to justify the neocolonialist strategy of imperialism.

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At first the idea of economic interdependence was connected mainly with the developed part of the world capitalist economy—with integration projects in Western Europe. E. H. Carr was one of the first theorists of such integration. During the early period of the Second World War he formulated the future dilemma of the Western world as balancing between self-determination and political independence, on the one hand, and on the other—the economic, technological and military dependence of sovereign states. He wrote that "... the self-determination of small nations was incompatible with unbridled economic power and complete economic interdependence".<sup>7</sup> A similar idea was later expressed by R. Cooper, who maintained that interdependence had grown because the higher levels of transnational exchanges had led to the creation of political and economic structures crossing national borders.<sup>8</sup>

With the drive of the liberated countries for economic independence this concept was also applied to relations between the advanced and developing states. Propagating the experience of the European Economic Community as an ideal embodiment of the idea of a voluntary renunciation of national sovereignty for the sake of higher common interests, Western economists are trying to mechanically transfer it to all spheres of economic ties between the centres of the

capitalist world and its "provinces". Dependence here is defined as a manifestation of interdependence.<sup>9</sup>

As the national liberation movement is reaching a new level—from winning political independence to a resolute struggle for economic independence—non-Marxist political economy has had to revise its attitude to the economic relations of the developed capitalist states with the former colonial provinces. Purely practical aims were pursued: the elaboration of forms and conditions, acceptable to monopoly capital, of access to the natural and labour resources of the developing countries, the retaining of them within the framework of the world capitalist system as its exploited members, and opposition to the growing trend of a number of Asian, African and Latin American states to take the road of socialist orientation.

On the basis of the concept of the interdependence of the developed capitalist countries' economies, the ideologists of neocolonialism have evolved its new version, entirely devoted to relations between the imperialist powers and young national states. However, their basic methodological approach remained the same. The essential feature of these relations, namely, their exploiter character is completely ignored as before, while only one contradiction is admitted, that between the economic expediency of integration and political considerations hampering this process.

The advocates of the idea of West European integration asserted that it practically eliminated the danger of an armed conflict between its participants. Similar argument is used by the authors of the concept of the "interdependence of nations", who depict transnational corporations as a driving force of interdependence. "If the multinational corporations continue to expand their activities as projected, they will contribute importantly to continuing economic integration and indirectly to a reduced prospect of conflict between the more thoroughly integrated countries. Like nation-states, they have a strong vested interest in a smoothly functioning international system. ... Economic integration continues to make war a less practical instrument of foreign policy."<sup>10</sup> So wrote the American economist L. R. Brown.

Back in the years of the First World War, Lenin ridiculed the opinion that international cartels as a most vivid manifestation of the internationalisation of capital gave grounds to hope for peace between the nations under capitalism. Lenin said: "Theoretically, this opinion is absolutely absurd, while in practice it is sophistry and a dishonest defence of the worst opportunism."<sup>11</sup> In our day, it is the activity of the transnationals that is a serious factor of growing tension in various regions of Asia, Africa and Latin America. Moreover, military conflicts, as recent history testifies, are especially frequent where developing countries are integrated most fully in the

system of "interdependence" with the imperialist centres, where the transnationals hold sway and their capital investments are huge.

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The neocolonialist concept of "interdependence of nations" is thoroughly elaborated in L. R. Brown's books *The Interdependence of Nations* and *World Without Borders*. Since the 1950s, the American economist asserts, the interdependence of nations has developed sharply. In addition to foreign trade that formerly was the principal type of economic relations between countries, a number of new factors has emerged—the formation of an international monetary system, the rapid growth of transnationals, interdependence in the sphere of ecology, technology, joint use of natural resources, etc. As a result, L. R. Brown declares, "when one inventories the many kinds of ties now existing among nations, one begins to appreciate how rapidly our daily well-being is becoming irrevocably dependent on the resources and cooperation of other nations".<sup>12</sup>

It follows from Brown's logic that the destinies of nations, their mode of life increasingly depend not so much on the state of affairs in individual countries, not on the policies of national governments or the socio-economic structure of this or that country, but on developments in various regions of the world. "The world is so interdependent and so interwoven today that economic, political or scientific decisions made within one country may affect far more people outside that country than within. Decisions by a multinational corporation may affect the well-being of the people in a given country more than those made by the government of that country itself."<sup>13</sup>

Unlike Marxists who disclose the exploiter essence of the growing internationalisation of production in the world capitalist economy as used by monopoly capital, transnationals above all, the authors of the neocolonialist version of the concept of the "interdependence of nations" draw an idyllic picture of such an economy. In their view, the principal subject of the modern "interdependent world" is not national states, but international monopolies which have created their own production network, independent of state borders. They refer to the fact that the sum of sales of commodities produced by TNCs can be compared to the gross domestic product of large states, and by far surpass the GDP of small countries. The transnationals that have concentrated in their hands modern technological means, financial resources and real economic levers are depicted by the ideologues of neocolonialism as the principal instruments of technical and economic progress. They allegedly not only create the mechanism of internationalised production, but also contribute to the flourishing of

all countries and determine the community of interests of Western countries and those of Asia, Africa and Latin America. Cooperation with international monopolies is especially important and advantageous, in L. R. Brown's view, for the developing countries.<sup>14</sup>

However, facts present another picture. According to UN data, the young states have to pay annually to transnational corporations about 10 billion dollars only for utilising their technologies. If we add to this indirect expenses involved in acquiring modern technical means, then the overall contribution gathered by transnationals from the developing world probably amounts to from 30 to 50 billion dollars every year.<sup>15</sup>

True, the authors of the concept of the "interdependence of nations" are forced to admit certain negative consequences of the activities of international monopolies. For instance, L. R. Brown writes that "although the behaviour of MNC's governed largely by interest," often corresponds to public interests, "it sometimes conflicts" with them.<sup>16</sup> However, no conclusion is drawn from these statements about the need to put TNC activities under the control of the states on whose territory they operate. On the contrary, the idea is advanced to organise additional "supernational" bodies which would ensure harmony between the aims of the transnationals and the interests of the world as a whole. Precisely the world as a whole, and not individual countries, inasmuch as the concept of the "interdependence of nations" provides no place for the legitimate desire of Asian, African and Latin American states to use their sovereign right to restrict the operations of transnationals in their territories and subordinate them to their national development aims.

The neocolonialist version of this concept has come into being as an answer of the theoretical defenders of the interests of monopoly capital to the demands of the peoples of the former colonial provinces who are fighting for political and then economic independence. Hence, the desire to picture the "independent world" as a union, a community of the interests of the developing countries and Western states, and attempts to neutralise the exacerbating conflict between the young states and the transnationals. The liberated countries are warned to refrain from the actions that can have a negative impact on the interests of the "interdependent world" as a whole.

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As the economic gap between the advanced capitalist and developing countries widens and the technological and general economic lag of the latter grows, the most efficient factor which can prevent the transnationals to exploit the newly free nations is the

national sovereignty of the young states over their natural wealth and economy.

This is why the principal premise of the neocolonialist concept of the "interdependence of nations" is the renunciation of national sovereignty as allegedly running counter to the modern economic process. According to the authors of this concept, the defence of their sovereignty by the young states is fraught with danger for the whole world and does harm to the participants in the world economy, including the countries striving to bolster up their independence. "National sovereignty," L. R. Brown maintains, "can, and frequently does, interfere with the efficient organisation of economic activity, the global dissemination of technology and the attainment of a higher standard of living for much of mankind."<sup>17</sup>

The adherents of the "interdependence of nations" openly oppose one of the basic principles of a new international economic order proclaimed in a declaration adopted by the 6th Special Session of the UN General Assembly in 1974. It says, among other things, that relations between countries should be founded on the sovereign equality of states and the self-determination of all peoples, the freedom of choice of their economic and social system, territorial integrity and non-interference in the internal affairs of other states. The declaration confirms the complete and inalienable sovereignty of each state over its natural resources and national economy, including the right to nationalisation and regulation of the activities of international corporations.

The practical steps undertaken by some young states in the context of these principles, especially the nationalisation of natural resources and the assets of some foreign companies, the actions of the OPEC members have seriously alarmed the ruling circles of capitalist states and the transnationals. The advocates of the concept of the "interdependence of nations" came out against these steps, hurling accusations of egoism and violation of their duty before society against the newly free countries which oppose the squandering of their natural resources and strive to use them in the interests of national development.

These Western economists declare that the national sovereignty of the newly free countries over their natural wealth is a threat to the economies of the countries that are traditional consumers of oil and industrial and agricultural raw materials imported from Asia, Africa and Latin America. They put responsibility for the raw material, fuel and energy crisis on the developing countries and demand that when deciding questions connected with the utilisation of natural wealth, the latter countries proceeded, first and foremost, from the interests of the entire planet (or rather, bourgeois society) but not from their own national interests.

The concept of the "interdependence of nations" rejecting the

principle of national sovereignty, ignores the main thing which determines the character of international capitalist economic relations, namely, their antagonistic nature and exploiter essence. Within the system of these relations all advantages are concentrated on the side of the industrialised countries and transnationals. The developing countries as a subordinate part of the world capitalist economy cannot use its growth in the interests of national development, and at the same time acutely feel all disorders of its functioning.

The internationalisation of production and the growth of the inter-state economic exchanges represent two different, but interconnected processes: the deepening of the international division of labour and the formation of one or another type of economic relations. The first process proceeds in the sphere of the productive forces. It is accelerated, with objective necessity, by the scientific and technological revolution and embraces all countries, irrespective of their socio-economic structure and political system. The second one is going on in the sphere of economic relations. It can assume a different, even opposite essence, which can be reduced to three types: 1) equal economic cooperation under which advantages from the deepening of the international division of labour are equally shared by all participants in it; 2) competition between more or less equal partners in which benefits and losses fall to the lot of one or another participant; 3) the constantly growing exploitation, along with the widening economic and scientific and technical gap, of more backward participants in the international division of labour by the imperialist powers and monopoly groups.

The interconnections between the developing and the advanced capitalist countries should be referred to the third type. It is for the elimination of the exploiter, unequal and unjust character of these relations that the newly free countries are striving for the establishment of a new international economic order. The consistent championing of sovereignty can help weaker participants in the international division of labour oppose the onslaught of the imperialist powers and transnational corporations. This is why the principle of national sovereignty has become in the focus of ideological struggle between the apologists of neocolonialism and the defenders of the genuine interests of the developing countries.

In our view, it is utterly wrong to maintain, as the advocates of the concept of the "interdependence of nations" are doing, that national sovereignty over natural resources is used by the young states to the detriment of the world economy. The developing countries often nationalise the assets of foreign monopolies precisely in order to increase deliveries of raw materials to the world market, overcoming the undermining activities of the transnationals that deliberately create a shortage of these materials with a view to enhancing their profits.

National sovereignty in the economic sphere and real economic independence achieved on its basis do not presuppose the implementation of the policy of autarchy, an artificial gap in the economic ties that have taken shape historically, and an isolation from the outer world. Such sovereignty helps gain equality and justice in foreign economic relations and a change in their conditions in a direction favourable for the developing countries, and contributes to the rational utilisation of natural riches in the world economy.

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The scientific and technological revolution and acceleration of world economic development have engendered new forms of dependence between countries and peoples and given birth to new global problems reflecting vividly the interconnection of the phenomena and processes of modern national and international life. It is evident that under present conditions not a single problem of a generally human nature cannot be solved at the expense of a people, to the detriment of the national interests of an individual country or a group of countries—a thing called for, intentionally or unintentionally, by the adherents of the concept of the “interdependence of nations”. The real way to solve these problems lies in the equal cooperation of all states, provided the sovereignty of each of them is strictly observed.

An example is furnished by the many-year experience of broad economic cooperation between the socialist countries within the framework of the Council for Mutual Economic Assistance. They elaborate joint programmes for solving food, energy and other problems on the basis of complete sovereignty and non-interference in the internal affairs of the cooperating countries, without any infringement of the national interests of any of them. This cooperation, far from widening the economic gap between states, leads to evening out their economic development levels. Such a method of solving common problems is conditioned by the one-type social system of the CMEA member states. The socialist states are resolutely coming out for international cooperation on a worldwide scale. They are working to solve the global problems of mankind by joint efforts and by turning the interdependence of countries and peoples from a factor exacerbating enmity and conflicts between them into a factor of expanding equal cooperation between sovereign countries.

Broadening their economic ties with the young states, the socialist countries adhere to the principles of equality, mutual benefit and non-interference in each other's internal affairs. The enterprises built with the scientific, technical and economic assistance of socialist states

form an important part of the public sector in developing countries and contribute to the strengthening of their economic independence. This does not entail the outflow of capital from newly free countries to socialist states, “brain drain” is completely excluded, and there are no discrimination or unfounded privileges. Back in 1965, the USSR repealed, unilaterally, customs duties on the industrial goods imported from the developing countries. In other words, the major principles of a new international economic order are thus being implemented, to which the ideological defenders of capitalist monopolies, including the advocates of the concept of the “interdependence of nations”, are so hostile.

At the same time, taking into account the growth of mutual relations and the intertwining of interests of all countries, the socialist states advance their positive programme for reshaping international economic relations. This programme is of a genuinely global character. It envisages the allround development of international cooperation between all countries, irrespective of their social systems, whereas the concept of the “interdependence of nations” practically excludes the socialist states from the system of international economic relations.

Among the global problems whose solution requires the cooperation of all nations, Soviet scholars maintain, there is the acceleration of the economic advancement of the former colonies and semi-colonies. This requires the emancipation of the young states from neocolonial exploitation, from a system of relations which is supposed to be strengthened by the concept of the “interdependence of nations”. Marxists take into account not only the growing role of various ties between peoples, but also an increasing close interdependence between global problems: energy, raw-material and food supply, demography, transportation, environmental protection, and a cardinal reshaping of international economic relations. They believe that in present conditions, the possibilities of solving any of these problems depend on positive international cooperation in all spheres. The key and most urgent problems are those of disarmament as well as consolidation of political detente and complementing it with military detente.

As international economic and other ties grow and intertwine, the responsibility of each government for the destinies of mankind is becoming much greater. Decisions and actions taken under the influence of time-serving considerations and inflicting damage to international cooperation can have most negative consequences for all states, including those whose governments undertake such actions. Discrimination of various kind, embargo and boycott, protectionist barriers, demonstration of military might and subversive activities on foreign territories disrupt the functioning of the world economy.

There is no doubt that for organising fruitful cooperation

between all nations—which is necessary and possible for solving global problems—the ideas of the 1975 Helsinki Conference and the positive experience of the interaction in Europe of states with different social systems should be spread to the rest of the world, and not reforms based on the neocolonialist version of the concept of the “interdependence of nations”. The Soviet Union and other countries of the socialist community have always advocated that relations with the young states of Asia, Africa and Latin America be based on the immutable principles and standards of international law; they have championed genuine equality of these states in the economic and the political life of the modern world, the complete recognition of the sovereignty of the peoples who have won their independence after a prolonged and stubborn struggle.

#### NOTES

- <sup>1</sup> K. Marx, F. Engels, *Selected Works*, Moscow, 1969, Vol. 1, p. 112.
- <sup>2</sup> V. I. Lenin, *Collected Works*, Moscow, Vol. 22, p. 240.
- <sup>3</sup> *Ibid.*, p. 245.
- <sup>4</sup> *Industry 2000—New Perspectives*, UN, New York, 1979, p. XIX.
- <sup>5</sup> J. Tinbergen et al., *Reshaping the International Order. A Report to the Club of Rome*, New York, 1977.
- <sup>6</sup> *North-South: A Programme of Survival. Report of the Independent Commission on International Development Issues under the Chairmanship of Willy Brandt*, London, 1980.
- <sup>7</sup> *International Organisation*, 1978, Vol. 32, No. 2, p. 16.
- <sup>8</sup> R. N. Cooper, *The Economics of Interdependence: Economic Policy in the Atlantic Community*, New York, 1968.
- <sup>9</sup> *International Organisation*, Winter 1978, pp. 18-19.
- <sup>10</sup> L. R. Brown, *World Without Borders*, New York, 1973, pp. 254-255.
- <sup>11</sup> V. I. Lenin, *Collected Works*, Vol. 22, p. 252.
- <sup>12</sup> L. R. Brown, *The Interdependence of Nations*, Washington, 1972, p. 5.
- <sup>13</sup> L. R. Brown, *World Without Borders*, p. 333.
- <sup>14</sup> L. R. Brown, *The Interdependence of Nations*, p. 18.
- <sup>15</sup> Doc. UN, TD(B) 779, February 27, 1980, p. 2.
- <sup>16</sup> L. R. Brown, *World Without Borders*, p. 225.
- <sup>17</sup> L. R. Brown, *The Interdependence of Nations*, p. 6.



### Strategy of Nuclear Madness

ALEXEI ARBATOV

In the pre-nuclear age few people, besides military men, showed an interest in strategic concepts. Things have changed radically since then. Strategic ideas have become the subject of heated debates often involving the general public. And that is understandable, for the world's accumulated stockpiles of thermonuclear weapons, and the threat they present to the very existence of our civilisation, have made for a new relationship between military strength, strategy and politics. In present-day conditions strategic designs and plans not only determine how a war will be fought, should it break out, but to a great extent also the probability of a nuclear conflict and, consequently, the stability of world peace.

The threat of a global war has made prevention of a thermonuclear conflict the crucial task of international relations, the surest way to achieve that is through negotiations to hamstring the arms race. Hence, strategy, the pace and scale of military rivalry, have become a special area of international relations. These questions have a direct bearing on the present political tension and the prospects for agreement on disarmament. That explains the wide-ranging discussion in all parts of the world about the strategic concepts advanced in the United States, particularly those formulated in the Carter Directive 59. It envisages selective US missile strikes on command centres and military targets of an adversary, especially those related to its strategic forces, as the initial steps in a “limited” and “protracted” nuclear war.

As Leonid Brezhnev stressed in the Central Committee Report to the 26th CPSU Congress, military doctrines that jeopardise peace, like the notorious Directive 59, “are a grave threat to all nations, including the people of the USA. They are being condemned all over

the world.”<sup>1</sup> Exposure of, and maximum resistance to, such strategic doctrines, are an organic part of the fight to roll back the war danger and restrain the arms race.

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Let it be said from the very outset, that the strategic idea on which Directive 59 is based can lay little claim to originality. In the early 1960s, Robert McNamara, the then US Secretary of Defence, came out with his own “counterforce” concept, which provided for nuclear strikes at the other side’s strategic targets, or, in effect, “disarming” missile attacks against the Soviet Union.

But towards the close of the 1960s, the strategic balance was evening out, and Washington had to abandon this suicidal strategy of nuclear superiority.

In the mid-1970s, Defence Secretary Schlesinger formulated a new variant of the “counterforce” strategy—“selective nuclear strikes”. With the advent of the Carter Administration, the Pentagon set about elaborating the Schlesinger idea, and the results of its exertions were formulated in Directive 59: “limited nuclear options” as one of the main elements of Washington’s “countervailing strategy”.

These are not the strategic ideas of some individual, government or party; they are a definite trend in strategic thinking approved, in one way or another, by four, or even five US Administrations, both Democratic and Republican. A strategy, moreover, that has sunk roots and has its own momentum. The concept of which Directive 59 is the embodiment now holds a much more prominent place in US military theory and policy.

Some subtle arguments have been adduced to support this strategy. Its basic premise is that military balance, which was central to the nuclear deterrence strategy of the late 1960s and 1970s, will in the 1980s allegedly undergo substantial change in some aspects. Towards the close of the 1960s, it will be recalled, with the USSR and US nearing strategic parity, the US leadership was obliged to admit that the Soviet Union had acquired the unequivocal capability to destroy a probable aggressor by a second strike. This was termed “assured destruction capability” resulting from a retaliatory strike. The US had therefore to reckon with the fact that the force pattern of the two sides was more or less symmetrical.

What, in Washington’s view, had changed in the 1970s? Its military and political leaders believe that a number of strategic arms programmes, primarily the deployment of multiple warhead inter-continental missiles and upgrading of their military sophistication made possible effective missile attacks on land targets of the other

side’s strategic forces, primarily on command centres and hardened ICBM launching silos. True, the other side, now as before, has the possibility of destroying enemy’s population and industrial areas in retaliation by means of air, missile and submarine attacks. But this capability, Pentagon strategists maintain, could be paralysed by the threat of a “nuclear exchange”, that is, strikes at the cities of the other side by similar reserve forces. In this way, the population and industrial centres of both sides would be held hostage, even if inter-continental strikes were delivered at land military targets.

From this line of reasoning the US leadership draws the much publicised conclusion that the US must have, along with its assured destruction capability, an additional capability for various flexible strike options against hardened military targets. Ex-Defence Secretary Harold Brown is quoted for the statement that the US must have the capability for selective strikes at military, industrial, political and administrative targets, while keeping in reserve a capability of assured destruction. These “theoretical” US constructs bring to mind Marx’s characteristic of similar theoretical exercises made a hundred years ago. He wrote that in wars “in the modern period of the imperialist bourgeoisie... the general tendency towards barbarism acquires a methodical character, lawlessness finds its legislators, and list law its codes.”<sup>2</sup> Directive 59 and its underlying theory—the latest “achievement” in American strategic thinking—cold-bloodedly manipulates abstract scenarios of nuclear strikes and abstract “damage levels”, a euphemism for the nightmare realities of thousands upon thousands of possible Hiroshimas.

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As was only to be expected, the US militarists are trying to blame the other side for the latest changes in their nuclear strategy. One of their chief arguments, used in massive propaganda campaigns about a “Soviet threat”, is that the Soviet Union is out for nuclear superiority, primarily in land-based ICBMs. There is the allegation also that this would make hardened American launchers vulnerable by the early 1980s, enabling the USSR to use its counterforce capability. These fabrications about Soviet intentions have become the main propaganda ploy of the military-industrial complex, which demands more American strategic weapons and revision of American military concepts. This campaign was used by opponents of detente to undermine SALT-2.

The authors of these bogus arguments deliberately gloss over the fact that existing disproportions in US and USSR land-based strategic missiles reflect the objective and historically-evolved differences in the development of their military technologies and their geographical

position. Besides, the Soviet Union's slight advantages are balanced, in the general ratio of strategic forces, by factors favouring the United States. Even some American sources maintain that a comparison of counterforce capabilities not within the artificial framework of one component of the strategic forces, but with due account of the capability of other elements, will show that there is no Soviet "superiority".

As for the Soviet Union's intentions, there have been repeated statements from the most authoritative sources that the Soviet strategic doctrine is of a purely defensive character, and that its nuclear missile capability serves only to restrain probable aggressors. The Soviet Union does not plan preemptive strikes against anyone, anywhere. As Leonid Brezhnev has emphasised: "Our efforts are directed precisely at averting the first strike and the second strike, indeed at averting nuclear war in general. Our approach on these questions can be formulated as follows: the defence potential of the Soviet Union must be at a level that would deter anyone from attempting to disrupt our peaceful life."<sup>3</sup>

The latest changes in US nuclear strategy are not due to a mythical Soviet threat. On the contrary, the present Western campaign about imminent Soviet "nuclear superiority" is no more than camouflage of attempts by the aggressive imperialist forces to change the present military balance in their favour. And it should be recalled, at this point, that the United States, and not the Soviet Union, initiated a series of military programmes in the 1970s aimed at destabilising the strategic equilibrium. These include, in particular, the Multiple Independently Targeted Re-entry Vehicles (MIRV) programme, which would increase about four-fold the nuclear warheads in the US missile arsenal. The Pentagon and its research and development branches are constantly developing and deploying more and more effective warheads and more accurate guidance systems, thus increasing the flexibility of retargeting US strategic missiles, and improving their guidance and communication systems.

A significant detail: in the past two or three decades, the periodical campaigns about a "Soviet threat" have, as a rule, attributed to the Soviet Union the military superiority the United States has been so anxious to acquire, and to that end would launch a fresh round of militarist psychosis.

There need be little doubt that the present clamour about Soviet counterforce superiority is meant to justify deployment in the 1980s of a new generation of more sophisticated and destructive American strategic weapons. These include land-based inter-continental MX missiles on mobile launchers, the Trident-1 and Trident-2 ballistic missiles on giant nuclear submarines of the "Ohio" type, long-range air, ground and sea-based cruise missiles. The strategic concepts that call for a capability to counter a mythical "Soviet threat" actually

create an American threat. For in terms of military technology, the forces the Pentagon is building up, allegedly for a retaliatory strike, can be used for a preemptive missile salvo.

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The development of US nuclear strategy over the past 20-30 years reveals one more regularity. The more subtle and complicated Washington's strategic concepts become, the more are they divorced from the realities of the international situation. New accretions to the arsenal of global devastation change nothing: existing stockpiles of nuclear weapons could destroy life on earth many times over. And the very concept of military superiority, in its traditional implications, i.e., the capacity to win on the battlefield, loses all meaning, becomes unachievable in a world of huge nuclear arsenals. Supporters of the arms race are finding it more and more difficult to justify continued stockpiling and perfection of nuclear weapons, and have to resort to far-fetched, artificial arguments. That these arguments will not stand up to serious criticism does not seem to bother their authors, for the new concepts are backed by the production of very real armaments costing billions of dollars.

First, what is understood by a "limited counterforce strike"? The official US explanation is deliberately ambiguous, which does not, however, provide military justification for the plans for such a strike. If the purpose is, say, to launch several missiles against the other side's military targets, then that idea is no less absurd than the threat of a suicidal massive strike. For any such move would obviously unleash a "central" thermonuclear conflict and, at the same time, give the other side the initiative in using its remaining practically intact, strategic forces. If the Washington planners have in mind a coordinated missile strike against the other side's entire complex of strategic land targets, this would obviously mean launching several thousand nuclear warheads. In that case the aggressor should have no doubt whatever that the reply to such a "selective" strike would be full-scale destructive retaliation, possibly without even waiting for a counterforce attack to reach its targets.

No less important is the fact that all these concepts are totally divorced from military, political and psychological realities. For it should be perfectly clear that a thermonuclear war, which would be the most destructive known to humanity, can not be conducted according to Pentagon computer models. Counterforce superiority, inasmuch as with the existing balance of forces it cannot deliver a disarming blow, loses all real military and political meaning. For to speak of the possibility of "victory" based on a calculation of gross nuclear megatonnage, or of the warheads remaining after the



destruction of oil refineries, power plants and other vital installations—and that is precisely the reasoning of many American experts—is, in effect, an insult to common sense. This was very aptly and unequivocally noted at the 26th CPSU Congress: “To try and outstrip each other in the arms race or to expect to win a nuclear war, is dangerous madness.”<sup>4</sup>

Behind the American nuclear concepts is not merely the speculative thinking of Pentagon experts. US policy on strategic arms is powered by far more weighty factors and is largely dictated by political considerations which determine official sanction of highly dubious and dangerous military doctrines.

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In the 1970s, the continued change in the world balance of forces in favour of socialism, and the upsurge of the national liberation movement, spurred fresh attempts by the most reactionary imperialist circles to torpedo detente. The very social nature of imperialist policy dictated the choice of the principal methods of countering detente and worldwide progressive change. The accent is now on building up military might, and the threat and use of force. The stockpiling of nuclear weapons has become an inalienable and important element of the policy of accelerating the arms race, aggravating the confrontation with the Soviet Union, and the military confrontation of socialism and imperialism at the highest level. Accordingly, around the mid-1970s, the US began its attempts to break the strategic stalemate by a new round of the arms race based on the new global war concepts. One of America's armchair strategists, Herman Kahn, cynically stated that the nuclear forces, even nuclear war, should be made more rational, acceptable and attractive as policy instruments.

Inasmuch as total nuclear aggression against the Soviet Union would prove suicidal for the United States, and a disarming strike in present conditions is unfeasible, there began a search for a way out of the stalemate in line with the concept of selective missile attacks, and limited counterforce options, that would enable the United States to bring political pressure to bear on the other side. Advocacy of a limited war, accompanied by appeals for more armaments, was meant to convince the world that the United States would not shun the use of nuclear weapons, tactical and subsequently also strategic, because, it was argued, this would not inevitably lead to total devastation. Leonid Brezhnev exposed the real purpose of such claims: “They want people to believe that nuclear war can be limited, they want to reconcile them with the idea that such war is tolerable.”<sup>5</sup>

In assessing the US position on strategic weapons, we have to take into account that there is an objective military equilibrium between

the USSR and the USA, and that the earlier official strategic concepts no longer suit the forces bent on continuing the arms race. New variants of the mythical “Soviet threat” are therefore being invented and new strategic aims are being set in building up America's thermonuclear potential. The idea is to justify and reorient expansion of American mass destruction weapons and particularly neutron weapons, the decision to start full production of which was taken in August 1981 in Washington. In fact this process is a clear and glaring illustration of what the Marxist classics revealed many years ago, namely, the dialectical interconnection of the mode of warfare, armaments, tactics and strategy. The organisation of an army and its mode of warfare, Engels wrote, depends on material conditions: “Advances in technique, as soon as they become applicable militarily ... immediately and almost forcibly produced changes and even revolutions in the methods of warfare.”<sup>6</sup> Fear of a devastating retaliatory strike is preventing the imperialists from employing nuclear missiles. But, with the technological revolution, the ominous dialectics of strategic weapons development are manifest in that the new American military concepts, resulting from the nuclear arms race, prepare the ground for its continuation in new forms and for attempts to exploit the strategic menace in foreign policy.

Thus, the crash buildup of ballistic missiles gave rise to McNamara counterforce strategy which, in turn, accelerated the deployment of MIRV warheads. They were introduced in the 1970s, along with the new concept of selective nuclear strikes formulated by Schlesinger, and this, in turn, accelerated the development of new weapons systems on mobile launchers with upgraded hard-target killing capability. Their planned deployment in the 1980s follows from the “limited nuclear war” concept, which has become a component of the “countervailing” strategy.

These strategic programmes have other, political aims, too. The Pentagon wants to force the Soviet Union into a new ten-year round of the arms race, particularly in areas in which the Americans consider themselves especially strong. Washington makes no secret of designs for the economic exhaustion of the USSR in the next round of production and deployment of a new generation of nuclear missiles. Apparently, Directive 59 is meant to implement the far-reaching and long-term political designs of the US imperialist element. It is these designs that have made dubious strategic ideas a factor of American policy.

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Throughout the postwar period the US imperialists have repeatedly attempted to gain nuclear superiority over the Soviet Union,

or at least acquire unilateral advantages. These plans did not succeed in the past and stand even less chance in the present global balance of forces. The Soviet Union's economic, scientific and technical level enables it to design and produce in a short time any kind of weapon on which the enemies of peace place their main stake. The Soviet Union has not allowed, and will not allow, anyone to talk to it in the language of threats and blackmail.

As the 26th CPSU Congress noted, "The military and strategic equilibrium prevailing between the USSR and the USA, between the Warsaw Treaty and NATO, objectively serves to safeguard world peace. We have not sought, and do not seek, military superiority over the other side. That is not our policy. But neither will we permit the building up of any such superiority over us. Attempts of that kind and talking to us from a position of strength are absolutely futile."<sup>7</sup> Judging by all the evidence, Washington's attempts to unite its West European capitalist allies under its control and bring them into the orbit of its rabid anti-Soviet policy by boosting the arms race, have not met with success. For America's partners are increasingly inclined towards independence and are increasingly concerned for their own interests, and are more interested in European detente and cooperation. Washington's far-reaching strategic ideas and its plans to step up the arms race are causing grave concern throughout Europe. And that is understandable: the "limited" nuclear war the United States advocates would mean total nuclear destruction for its European allies.

In sum, the military-political and other results Washington anticipated from innovations in its nuclear policy, are highly illusionary. But their dangerous consequences and high cost are very real indeed. Readjusting America's nuclear policy to the concept of "limited" and "selective" strikes lowers the nuclear threshold, that is, makes employment of nuclear weapons at an earlier stage of the conflict more probable. The increasing vulnerability of key elements of the strategic forces, as some US specialists have noted, will stimulate their preemptive use out of fear of losing them as the result of a strike by the other side.

Washington's strategy innovations lead to destabilisation of the strategic equilibrium and are bound to start off a new round in the thermonuclear arms race. Politically, they are bound to increase tensions, hostility and distrust in international relations. Economically, they will lead to the expenditure of ever more billions which could be used for peaceful purposes. Finally, the new arms race spiral would gravely complicate negotiations on all the issues involved in detente. Some of the programmes the militarists are trying to put through go beyond the proposed or already negotiated SALT limits. The qualitative characteristic of some of the new weapons systems

(cruise missiles, ballistic missiles on mobile launchers) hamper mutual verification of possible agreements on their limitation.

Returning to the question of why Washington launched out into this dangerous missile buildup, it is not enough to say that we are dealing with a care of recidivistic expansionism, or the stepped up activity of reactionary military circles at home. These factors play an important part, but they are not the only ones. In analysing the difficulties confronting detente and armaments limitation in the late 1970s, we should not underestimate the fact that the huge destruction potential threatening the world has its own momentum, its own force of acceleration and renewal. And it is in this, and not in a mythical Soviet superiority, that we have one of the most dangerous and real sources of the war menace.

The USA-USSR strategic ratio, even given general equilibrium in nuclear weapons, includes numerous partial disproportions due to the objective differences in the situation and history of the two powers. US supporters of the arms race grossly exaggerate the importance of one or another advantage of the other side and urge its elimination. But they gloss over the equalising role of disproportions that favour the United States. Scientific and technological progress periodically make possible the development of more sophisticated weapons, and the US military-industrial complex insists on their development and deployment on the pretext that the other side could develop them, thereby upsetting the strategic balance. Besides, missiles, aircraft and submarines are becoming physically amortised and morally obsolete. Hence the demand by interested parties for their "timely" replacement by new and, naturally, more effective systems capable of qualitatively changing the military balance. Besides, the long time needed for development and procurement of strategic weapons means that planning has to start five, even ten years ahead, so that the military-industrial complex can invent future "threats" to US security.

Needless to say, it is not a matter of the arms race becoming an impersonal and objectively inevitable process. No, behind it are definite social strata, organisations and individuals. In particular, there are the aggressive groups that insist on continued readjustment of strategy to assure an effective war-fighting capability in which America's losses would be reduced to an acceptable level. Of late these groups have been gaining influence and playing a bigger role in the United States. Their aim is not only revision of SALT-2, but dismantling of the entire arms limitation process. It is also clear that the arms race now has a kind of inbuilt mechanism, powerful "fly wheels", set methods and arguments. Arms race boosters have repeatedly tried, and are still trying, to justify their policies by pleading the supreme interests of national security. Actually they want new bargaining chips in the form of new weapons, needed, they

allege, to give the US a stronger position in talks to restrict nuclear missile rivalry.

In practice, however—and this has been convincingly demonstrated by the events of the 1970s—far from assuring the United States military superiority, the arms drive cannot solve a single one of the problems, the solution of which allegedly justifies it. For the fact is that armaments programmes do not even out strategic disproportions, but on the contrary, destabilise the military balance. Attempts to acquire unilateral advantages and endanger some defence components of the other side, produce counter measures and backfire. The stockpiling of armaments, ideas for making more effective use of them, do not help to reduce, but rather increase the probability of a global conflict and this, naturally, does not strengthen the security of the United States or of any other country.

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In this nuclear age, as its first three decades have shown, there is no military solution for security problems, nor can there be. Security cannot be assured by the arms race. A fundamentally new approach is needed. Success in detente and the major arms limitation agreements of the 1970s have demonstrated the immense potentialities and advantages of this approach.

International complications, the difficulties in adapting American policy to the objective strategic parity at the turn of the 1970s, are being exploited in the United States by enemies of detente and advocates of an unlimited arms drive. Though their influence is not absolute, their activity is having negative political effect. Yet, even in the present complicated situation in the United States and beyond it, very many representatives of American ruling circles agree, though reluctantly, and not always with full voice or without reservations, that the SALT negotiations must continue. This is expressive of the realities of the nuclear age, of the global balance of forces, which does not promise the United States victory in an all-out arms race and confrontation.

The 26th CPSU Congress, it will be recalled, advanced a comprehensive series of new initiatives and proposals in such areas as detente, armaments and armed forces, covering many parts of the world and envisaging measures of a political and military character. On strategic weapons, the USSR repeated its appeal for restraint and reaffirmed its readiness immediately to resume negotiations with the US, preserving everything positive achieved in the SALT talks.

The Central Committee Report to the 26th CPSU Congress stressed anew the Soviet Union's desire for agreement on limiting all types of nuclear missiles on the principles of equality and equal security of all the parties concerned. In particular, the Congress

proposed restricting the deployment of new US nuclear submarines (of the "Ohio" type) and similar Soviet systems (of the "Typhoon" type) and banning the modernisation of existing submarine-based ballistic missiles and development of new ones. This would do much to stabilise the strategic equilibrium, considering the presumed capability of the above mentioned weapon systems to deal highly accurate and surprise attacks with minimal flight time to targets.

These and other Soviet proposals have a common aim, formulated by Leonid Brezhnev: "To safeguard peace—no task is more important now on the international plane for our Party, for our people and, for that matter, for all the peoples of the world."<sup>8</sup> In calling for progress in limiting strategic and other weapons, the Soviet Union is not asking favours from anyone. Its peace policy is a sign not of weakness but of strength and of confidence in the soundness of its positions. Strategic parity, an historical achievement of the Soviet people, has a great stability momentum and cannot be undermined by manipulating military programmes.

Military equilibrium, the security of the Soviet people and its allies, will in coming years be ensured both with new SALT agreements and, if worse comes to worse, without them. But conscious of the terrible dangers and cost of the unhampered growth of destruction potentials, the leadership of the CPSU and the Soviet government, even in the present complicated international situation, have not relaxed their efforts to achieve a healthier world political climate and curb the arms race. This is the supreme criterion of realism in present-day conditions, for in the nuclear age the only alternative to such a policy is a heightening threat of universal destruction. *Tertium non datur.*

#### NOTES

<sup>1</sup> L. I. Brezhnev, *Report of the Central Committee of the CPSU to the 26th Congress of the Communist Party of the Soviet Union and the Immediate Tasks of the Party in Home and Foreign Policy*, Moscow, 1981, p. 36.

<sup>2</sup> K. Marx and F. Engels, *Werke*, Vol. 13, p. 444.

<sup>3</sup> L. I. Brezhnev, *Our Course: Peace and Socialism*, Moscow, 1978, p. 17.

<sup>4</sup> L. I. Brezhnev, *Report of the Central Committee of the CPSU to the 26th Congress...*, p. 40.

<sup>5</sup> *Ibid.*, p. 36.

<sup>6</sup> F. Engels, *Anti-Dühring*, Moscow, 1969, p. 205.

<sup>7</sup> L. I. Brezhnev, *Report of the Central Committee of the CPSU to the 26th Congress...*, p. 39.

<sup>8</sup> *Ibid.*, p. 53.



## Dostoyevsky and World Literature

**From the Editors:** Below is a review of a round-table discussion on "Fyodor Dostoyevsky and World Literature" sponsored by the magazine *Inostrannaya literatura*, No. 1, 1981. The discussion, in which a number of well-known Soviet literary scholars took part, was timed to coincide with the 100th anniversary of the death of the great Russian writer (1821-1881). The report is compiled by A. Nikolayevskaya of the *Inostrannaya literatura* staff.

In the last hundred years, Dostoyevsky's literary legacy, his philosophical and aesthetic views, his journalistic writings and his influence on Russian social and aesthetic thought and on world culture, have been a subject of many studies by Russian and Soviet scholars, among them A. Lunacharsky, V. Vinogradov, M. Bakhtin, L. Grossman, A. Dolinin, M. Khrapchenko, V. Kirpotin, B. Suchkov and G. Fridlender.

Russian classics became widely known to the world reading public in the 1880s and were almost immediately a subject of sharp controversy and debate among literary and intellectual circles. And this is particularly true of Dostoyevsky. In the West his work is sometimes subject to various misinterpretations. Some portray Dostoyevsky as a forerunner of the modernist trend in literature and counterpose his work to the realistic tradition. Others, seizing on the contradictions in Dostoyevsky's philosophical outlook, try to set his work against the world of socialism. Soviet literary criticism has consistently repulsed such attempts. Without dismissing the complexities of Dostoyevsky's work and of his social and philosophical views, it singles out the most important elements of his literary legacy, elements which unite him with the best traditions of Russian and world classic literature and culture.

The round-table discussion does not claim to be a definitive account of the subject; it was not the purpose of its participants to give it the character of a final assessment. On the contrary, each tried, albeit in a condensed form, to state his conception of one or

two aspects of an extremely complex subject: Dostoyevsky in an international context. The following took part in the discussion: B. Bursov, V. Vetlovskaya, D. Zatonsky, Yu. Karyakin, V. Kirpotin, V. Kozhinov, V. Lakshin, T. Motyleva, P. Paliyevsky, Yu. Seleznev and G. Fridlender.

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In opening the discussion **P. Paliyevsky** (member of *Inostrannaya literatura* editorial board and Deputy Director of the Gorky Institute of World Literature of the USSR Academy of Sciences) said that there was no more appropriate writer to whom to turn our attention today than Dostoyevsky, about whom there existed many different opinions. I have in mind, he said, Dostoyevsky's ability to recognise truth wherever it might be found. Paliyevsky recalled Dostoyevsky's relationship with N. Strakhov, his close associate, with whom he often had violent arguments, and with Dobrolyubov, his ideological opponent, with whose opinions he often agreed (specifically, in the article "Mr. G—bov on the Question of Art"). It would be appropriate to compare Dostoyevsky with Belinsky in this context. Obviously growing is Dostoyevsky's role in resolving some of the important key problems of our days. Dostoyevsky possesses a colossal strength moving in the direction of truth. We have no doubt to which direction of social development today Dostoyevsky would give his support. But there is still much about his ideas and their role in literature we need to understand.

**G. Fridlender** (author of the book *Dostoyevsky and World Literature*) recalled Lenin's comment that the universal significance of Tolstoy as a writer reflected "the universal significance of the Russian revolution",<sup>1</sup> and said that this fully applied also to Dostoyevsky, who detested the bourgeois world of property, the world of "the petty bourgeois in dress coat", the world of mediocrity, self-interest and ready cash. He passionately sought for Russia and for all mankind a different path of development, an anti-bourgeois path.

Today there are many studies in the West in which Dostoyevsky is regarded as someone who celebrates chaos, as the father of the literature of the absurd. Actually Dostoyevsky was least of all a pessimist. His work is an affirmation of "living life", of human dignity. Herein lies its significance. And this passionate rejection of the evils and abnormalities of bourgeois civilisation, and an ardent search for truth are an inalienable part of Dostoyevsky the writer.

The persistent and growing interest in Dostoyevsky in our time is due to an extraordinary intellectual tension and an abundance of action that are characteristic of his books, to his belief that evil could

be conquered and the brotherhood of men established here on earth, and to his appeal for the preservation in man of a strong moral centre. Loss of this centre was fraught with social and psychological disintegration and a sinking into the dark "underground" of the soul. Dostoyevsky was the first writer to uncover and investigate all these consequences.

Tolstoy once said that Dostoyevsky was "all struggle". The social circumstances which in the epoch of bourgeois civilisation set people apart from one another and implanted malice in their souls, according to Dostoyevsky's diagnosis, at the same time stimulated their consciousness. It was these circumstances that led his heroes to embark on a path of resistance.

The originality of Dostoyevsky is also seen in the fact that instead of the traditional family novel and the novel about careers, he introduced the novel in which the hero is a man of ideas in search of an answer to the "question of life". For Dostoyevsky, one must not joke about ideas, which are in their own way living creatures with flesh and blood. Ideas can be wholesome, but they can also become venomous trichinae destroying the vitality of individuals and of society. For Dostoyevsky, the validity of any abstract idea must be tested by the life actually lived by individual persons and by the great mass of mankind.

Fridlender paid particular attention to the novel *The Possessed*, to Dostoyevsky's warning against those who gambled on revolutionary ideas and to the tragic consequences of such gambles. The 20th century has fully revealed the logic of the evolution of pseudo-revolutionaries, whether of the extreme left or extreme right. Examples of this include Mussolini, who as a young man called himself a socialist, Hitler, and today's neo-fascists. It is not by chance that Marx and Engels and Dostoyevsky alike sharply criticised the Nechayev trend, although of course they did so from different positions. (S. Nechayev, a participant in the Russian revolutionary movement, was organiser of the secret society Narodnaya rasprava [The People's Summary Justice]. Nechayev resorted to trickery and provocation and even murder. His approach was condemned by the First International and repudiated by Russian revolutionaries.)

Fridlender discussed the democratic nature of Dostoyevsky's work, pointing out that Dostoyevsky thought of himself as a spokesman for the interests, not of "one-tenth", but of "nine-tenths" of mankind.

That Dostoyevsky's work continues to influence today's writers is explained by the fact that Dostoyevsky's art is deeply rooted both in Russian culture dating back to the earliest periods, and in world culture beginning with ancient Greek and Roman culture. Writers of all countries and ages became Dostoyevsky's interlocutors, as it were, since for Dostoyevsky they were not merely people who had written

books, but people in whose life and work the great drama of human history was reflected.

Posthumous assessment of Dostoyevsky is both important and instructive. Writers and critics of the 19th and early 20th centuries thought that Dostoyevsky's art was unwieldy and that Dostoyevsky had violated every accepted standard and canon of traditional "good literature". Today probably no one in the world questions the universality of Dostoyevsky's images and his originality as a writer.

V. Vetlovskaya (author of the book *The Poetics of "The Brothers Karamazov"*) discussed two problems: first, that of interpretation and textual analysis of Dostoyevsky's work, the limits to variant readings, and the permissibility of substituting subjective "guesswork" for objective analysis, i.e., the problem of the *relativity of polysemantic reading*; and second, the rootedness of Dostoyevsky's work in the Russian tradition, the indissoluble ties of his art with the folklore, lives of saints and chronicles of Russia. Dostoyevsky was interested in other people's ideas and views generally. Not only folklore, but world literature from the antiquity to the modern age helped him in his work. Indeed, his work shows that the more a writer has to say to posterity, the more his work is nourished by the wisdom of people who lived before him.

D. Zatonsky (author of a number of studies of 20th-century West European literature) noted the growing interest of Western writers and readers in Dostoyevsky's work which was studied, argued about and imitated. Dostoyevsky exercises both a direct and an indirect influence on the development of literature. But why precisely Dostoyevsky? Is there something in his work that is universally significant and instructive, something writers throughout the world need?

The aim of literature and art has always been to understand man's place in the world, in his milieu, in his relation to the community. So long as the laws of such relations were not understood, art oscillated between two extremes: assertion of man's total dependence on fate, God and so on, and dreams of complete individual freedom. Major writers, however, sensed that the truth probably lay somewhere in between: indeed it is for their awareness of this that they are significant. Some of them, not many, who now and then burst upon the literary scene, clothed the complex relationship between the individual and the external material world in the form of great tragic Utopias, or arranged "a game" in which one gropes for some possibility or hypostasis which is not confined within the predetermined limits of the individual. Suffice it to recall in this connection Rabelais' *Gargantua and Pantagruel*, Cervantes' *Don Quixote* and Sterne's *Tristram Shandy*. Dostoyevsky belongs to this line of writers; he was their heir.

Zatonsky then discussed the rise of classical realism in the 19th century. Society came to occupy a central place in narrative prose while man was analysed in terms of the social functions he performed. The development of this form of narrative prose is due above all to the genius of Balzac. As for Dostoyevsky, he belongs to another trend of classical realism which descends from Rabelais and Cervantes. Its 19th-century pioneer was Stendhal who was fascinated by human consciousness and was interested in psychology and in the economic and social factors as refracted in human consciousness. For Balzac, economics was of primary importance. Stendhal and Dostoyevsky, on the other hand, preferred to observe reality as reflected in human consciousness.

They did not regard a craving for money and material possessions as the only or even the decisive factor in the shaping of personality. The human condition, which in the final analysis is always socially determined, emerges in their books as something full of contradictions, at times confused and fraught with numerous and the most diverse solutions. For individuality, apart from being important in itself, proves at every moment to be a point of intersection of various causes and effects.

When Marx said that money "transforms fidelity into infidelity, love into hate, hate into love, virtue into vice, vice into virtue, servant into master, master into servant, idiocy into intelligence and intelligence into idiocy,"<sup>2</sup> he was speaking of a power that distorts these values, and strange as it may seem, this is better grasped by Dostoyevsky than Balzac.

Between the economic basis and human behaviour there lies a whole layer of ideological superstructures. As capitalism develops and declines, their role increases continually. Contradictions deepen, and as a result various intermediate stages, all indirect action and deviations from the given orbit acquire ever greater social significance. A "dislocated civilisation" emerges, impelled into motion by ephemeral changes and poisoning itself with the products of disintegration.

Stendhal thought that his books would be read and understood not earlier than 1880. Dostoyevsky died in 1881, and it was only after his death that his fame spread and grew. The trend of world literature which I have tried to outline here was ahead of its time. But the work of its pioneers is becoming ever more important for our epoch; it is an organic part of the intellectual and moral temper of the 20th century.

Zatonsky recalled Kafka's comment on a drawing by George Gross which depicts capitalism as a system of relationships stretching from within to the outside and from the outside to within, from top to bottom and from bottom to top. Kafka said that under capitalism everything was dependent on something else and everything was in

chains, and that capitalism mirrored the state of the world and the human soul.

In one sense Kafka's remark is misleading, as he seems to be trying to dismiss the economic aspect of the problem and to see in capitalism only the anomalous internal existence of the individual. But there is another side to this. In its contemporary phase capitalism proves to be increasingly in the grip of the force of alienation to which it has itself given rise. This indeed points to the mad state of the world and of the human soul.

Zatonsky said that Heinrich Böll's novel *Fürsorgliche Belagerung* vividly illustrated this. Its main character, Tolm, is an aging newspaper magnate. Both his sons are left extremists. Tolm realises that socialism will eventually triumph. It is remarkable that Böll, who has lately found the real experience of building socialism unacceptable, should in this book make his hero speak about the socialist prospect of development of society.

*Fürsorgliche Belagerung* is clearly a product of the author's observation and imaginative perception of bourgeois reality of the second half of the 20th century. But its links with the trend of development of the novel which we have just considered, and above all with Dostoyevsky, are unmistakable. The capitalist world regarded as an "abnormality" and "sickness", man seen as an indirect function of circumstances, and his actions shown to be a complex conglomerate of social factors, and at times also to be a mutiny against "profits"—all this is largely derived from Dostoyevsky.

In closing, Zatonsky cited an example of another kind—the work of the contemporary Austrian writer Peter Handke. Following Dostoyevsky, who believed in the harmonious, integral personality, Handke is engaged in a thoughtful search for the "happy man".

**Yu. Seleznev** (author of the book *In the World of Dostoyevsky*) considered Dostoyevsky's work as a source of a new literary force which was not immediately understood in the West. The writer through whom Russian literature first entered the world scene is Turgenev, followed by Tolstoy and Dostoyevsky and somewhat later by Chekhov and Gorky.

The extraordinary perception of Dostoyevsky in the West, Seleznev pointed out, was due largely to the fact that the West came to know Dostoyevsky's work at a time (the end of the 19th and the beginning of the 20th century) when traditional forms of humanist consciousness was in a state of crisis or even "collapse". The process of dehumanisation in literature, art and philosophy is clearly manifested in the various schools of cultural decadence. It is not accidental that "immoral" Nietzsche became at that time the "ruler of the minds" of many bourgeois intellectuals.

Attempts to understand and interpret the spirit and significance

of Dostoyevsky's colossal talent through the prism of "disintegration" led to Dostoyevsky being labelled "one who exalts chaos and disharmony", "a proponent of the relativity of good and evil", "a forerunner of Nietzsche", and so on. At the same time, however, even views such as these could not rob the Western reader who recognised in Dostoyevsky a spokesman for the "humiliated and insulted" of the humanist perception.

Seleznev then discussed the idea that Dostoyevsky's work was determined not so much by the principles of humanism as by the national spirit and tradition, that it was oriented towards the future and therefore spoke to us today not so much about what had been as about what was to be.

V. Lakshin (author of *Tolstoy and Chekhov*, *Ostrovsky* and other books) said that Dostoyevsky's influence on Russian and world culture was indisputable and generally recognised. Indeed, he noted, it seems at times that there is no major 20th-century literary work in which we do not find traces of ideas, images, even the very mode of understanding discovered by Dostoyevsky, whether in the form of ready acknowledgement of Dostoyevsky's influence or mastery of his art or polemic with him.

Dostoyevsky comes to our mind when reading Thomas Mann's *The Magic Mountain*, Kafka's *The Trial*, Gorky's *Life of Klim Samgin* and Bulgakov's *The Master and Margarita*.

In Albert Camus' *The Fall*, man's inner nature is investigated with a forthrightness and courage which are part of Dostoyevsky's legacy. There, as in *The Outsider* and *The Plague*, the use of the parable is not a concession to literary fashion, but an attempt to raise an image of man in literature to the philosophy of man. Humanism does not warrant complacency; it involves pain.

Lakshin went on to analyse in this connection the "conscience" of the respectable bourgeois, his sanctimony and mendacity, and gave as an example of this William Golding's *Lord of the Flies* in which the young heroes are brought up on moral precepts that are cruel and inhumane.

On the subject of Dostoyevsky's artistry, Lakshin said that many of Dostoyevsky's contemporaries regarded him as a talented fiction writer who had a way of depicting characters that was unusual and all his own and handled plot in an entertaining manner but who nevertheless was only one of several notable writers of the time, including Grigorovich, Goncharov and Turgenev. They little realised that the characters and conflicts portrayed by Dostoyevsky opened a whole new trail into the future. What Dostoyevsky was saying often seemed to them to be exaggeration, self-inflicted spiritual torment, a nervous twitching. Tolstoy was wary, if not critical, of Dostoyevsky's method of characterisation, although he was attracted by the spiritual

force in Dostoyevsky. He thought the latter's heroes were passionately, but not plastically, drawn, by a method that was "spiritualistic", and this disappointed Tolstoy.

The agonising spiritual struggle, the confessions of the heroes when they seem to leap off from a hill top and discover what lies at the bottom of it, that is, the dark side of the soul—all this was something new in literature. It may be that people in the 19th century were more frank with one another in conversation than in the 20th century (though they were less frank in their writings). But what takes place in Dostoyevsky's novels did not always coincide with most people's everyday experience.

Dostoyevsky's method, in fact, consists in bringing the world of the subconscious, half-conscious and unconscious, where submerged emotions and instincts reign supreme and await conscious expression, to the world of action. The result is a fantastic realism: it is realism because it is true to the psychology of man in his existential state; it is fantastic because in everyday life there are only specks, reflections, and glimmerings of what Dostoyevsky presents as unadorned reality of life, whether in St. Petersburg or in the imaginary town of Skotoprigonicvsk in *The Brothers Karamazov*.

People in real life do not speak or act as the characters do in Dostoyevsky's novels. But they think this way when they are alone with themselves, and they feel this way, that is, instinctively; and this world of secret and dark emotions is what Dostoyevsky exposes to the light of day as reality. That is why in Dostoyevsky's novels it seems that it is not people talking to one another, but their souls and ideas confronting one another. From the point of view of what came after Dostoyevsky, these confrontations no longer appear abstract or arbitrary. The ideas, thoughts, instincts and emotions which had not yet fully manifested themselves in the 19th century have become more and more clearly and even painfully evident in the 20th century—in the mode of life, relation between the sexes, social conflicts and violent crimes.

Dostoyevsky's ideas and novels, said Lakshin, should be considered in the context of social and historical developments going back to the French Revolution of 1789 and to Hegel and Kant. Russian literature of the second half of the 19th century was a kind of answer to the events that had taken place in the world. Dostoyevsky could dismiss the French Revolution as a blood-drenched upheaval during which power was handed over to the bourgeoisie. But the motto "liberty, equality and fraternity", perceived in a special way in the conditions of Russia, had always been for Dostoyevsky a meeting place of ideas which he ardently shared or passionately refuted. Like Tolstoy, Dostoyevsky wanted to understand Russia's destiny in the light of world developments, and to regard questions about his own soul as part of the eternal questions facing mankind.

Dostoyevsky was a stout champion of the ideal of *freedom* which he understood as the unfettered freedom of the individual. At the time of 1861 reform that was no abstract theory. But Dostoyevsky puts this ideal to an excruciatingly severe test, having sensed the dialectics of good and evil inherent in it. Does man want to drink up the whole cup of liberty? Will he be happy if he has liberty? And what will this liberty do for him? These are but some of the hard questions which Dostoyevsky addresses to those who in spite of everything want to live "as they please". Raskolnikov wants to be free; he wants to show the world that he is not a mere louse but someone who "has power". But this power, which means liberty for oneself without liberty for others, is the road to crime.

With similar relentlessness Dostoyevsky examines the ideal of *equality*. In the idea of social equality Dostoyevsky sees the spectre of Shigalevism (Shigalev is the hero of the novel *The Possessed*), encroachments on the integrity of individuality, and the end of diversity and full flowering of life. If in the dreamed-of future equality means strangling the all-powerful human mind in its infancy and reducing talents to a common denominator, do people then need such equality? And what if equality is incompatible with liberty since nothing in nature is equal? Probably never before had the ideals of liberty and equality been examined so intently and with so much apprehension. And yet one feels certain that Dostoyevsky was not an enemy of social equality even though he asked some uncomfortable questions about it. What attracts Dostoyevsky definitely and most of all because it resolves for him the contradictions between liberty and equality, is *fraternity*.

Lakshin then went on to speak of the polyphonic nature of Dostoyevsky's work, at the same time calling attention to a tendency towards *soliloquising*, impassioned exposition and tendentiousness in Dostoyevsky's writing.

In Lakshin's opinion *Notes from the Dead House* is of special significance among Dostoyevsky's works. Its great theme is that while the social environment is at fault, man is nevertheless responsible for himself. Shiftiness and relativity of moral standards was anathema to Dostoyevsky. Who does not remember the inspiring and paradoxically happy picture of the convicts' theatre in the novel, where for one moment a feeling of joy suddenly unites these broken, tormented and embittered men, and as in a lightning flash the possibility of fraternity is revealed?

Thus, what gives the book its power is not "equality" of votes as particular truths, but a belief that it is possible, through the dark "abyss" of human nature and the exposed "depths" of the subconscious, to arrive at fraternity which unites people.

**V. Kozhinov** (author of *Dostoyevsky's Novel "Crime and Punishment"*, *On the History of 19th-Century Russian Poetry* and other books)

said that in his opinion world literature was not a sum total of literatures of the whole world, but only the work of those writers who embodied in the given period the mainstream of world art. Thus, for instance, Dante, Shakespeare and Dostoyevsky embodied world literature at given stages of its development; and this is so not only because these writers were more gifted than others, but because each was a genius of a national literature which at a given period became a channel through which the main current of world literature flowed. Russian literature of the second half of the 19th century was such a literature.

It is impossible, said Kozhinov, to compare Dostoyevsky with his contemporaries—Western writers and his followers—because they are incomparable. Dostoyevsky thought and wrote in the light of a millennia-old history; he was capable of perceiving every fact, every phenomenon of life and thought as a new link in a millennia-old chain of existence and consciousness, both Russian and worldwide. Dostoyevsky raised totally new questions, and his art dealt with a fundamentally new subject. In a word, Western literature dealt with phenomena which are clearly expressed in the concepts of the "individual" and the "nation". In Dostoyevsky's work, realities reside in the concepts of the "personality" and the "people".

Kozhinov then commented on the comparison drawn by some critics between Dostoyevsky and such myth-makers as Camus, Sartre, Updike and others, noting that there were important differences between them. The so-called myths-creating works of Dostoyevsky are part of process of organic and natural construction of an imaginative world. His images are essentially *ontological* as opposed to the purely *epistemological* images of the great majority of his followers.

**V. Kirpotin** (author of *Dostoyevsky the Artist*, *The World of Dostoyevsky* and other books) spoke of the specific features of Dostoyevsky's imaginative system which is unusually rich in philosophical thought. Dostoyevsky has been called an artist of ideas (by Engelgardt and Berdyaev, for example). However, Dostoyevsky had never made literature a mouthpiece for philosophy, in the way that philosophy in the Middle Ages became a servant of theology. For Dostoyevsky, ideas and ideals were as much an inseparable part of reality as all other manifestations of it.

A penetrating psychologist, Dostoyevsky did not consider himself a psychological writer. "I've been called a psychologist," he wrote, "but that's not so. I'm only a realist in the highest sense; that is, I portray the human soul in all its depth."<sup>3</sup>

In the speaker's opinion, Soviet literary criticism has worked out a correct approach to Dostoyevsky's psychologism: man cannot be explained apart from sociology, history, ethics and philosophy, apart



from his ideas and ideals. Dostoyevsky's first teacher, Hegel, called for a study of people in the light of "common elements".<sup>4</sup> Dostoyevsky had undoubtedly read Hegel's *Philosophy of History*; this is reflected in *Crime and Punishment* both as regards the book's subject and philosophical concepts. But Dostoyevsky did not blindly copy Hegel. Thus, whereas Hegel justifies his heroes according to the formula that "all that is real is rational",<sup>5</sup> Dostoyevsky condemned existing reality for being unjust and cruel.

In Russia, discussions between friends and colleagues tended to turn into a philosophical school. In the 1840s, Dostoyevsky was close to Belinsky and his group; in the 1860s, with Apollon Grigoryev and Strakhov; and in the 1870s, with Vladimir Solovyev. When he was writing *The Idiot* he read Voltaire and Diderot. Traces of arguments over the philosophical ideas of Feuerbach and Chernyshevsky can be found in *The Brothers Karamazov*.

**Yu. Karyakin** (author of the book *Raskolnikov's Self-Deception* and dramatisations based on *Crime and Punishment*, *The Possessed* and others) said that there was probably no writer more torn by inner conflicts than Dostoyevsky. But now, more than ever before, it is clear that an extraordinary love of life is the leading and prevailing tendency in him. And the more powerful this love of life, the more sensitive he became of the dangers facing mankind. And conversely, the more apparent and horrible those dangers, the greater the resistance to them which he found in himself and in people.

It is fairly recently that the following words by Dostoyevsky became known which throw a good deal of light on his work: "...despite all the losses, I love life for life's own sake, and indeed I'm still planning to *begin* my life... This is the main thing about my character, and perhaps also about reality."<sup>6</sup> Here we have the essence of Dostoyevsky the man and writer. This may well be regarded as the *hidden epigraph* to all his work.

Many European writers and thinkers, shaken but also fascinated by Dostoyevsky, seemed unaware that Dostoyevsky was rescuing, defending and developing their own, European (and universal) spiritual values, which the bourgeois West had renounced and forgotten, could no longer know and perhaps had no wish to know.

All great writers, said Karyakin, are also great life-affirming creators; this is the "common denominator" of true art. Life-haters do not survive, for what they produce can only be fads. This "living life is something so direct and simple, something that looks you so straight in the face, that its very directness and clearness make us unable to believe that it can be the very thing we're seeking so laboriously all our lives".<sup>7</sup>

If the motive force of a writer's work is a love of life, its basic criterion is moral integrity. "It is not enough," said Dostoyevsky, "for a person to verify his moral integrity by his loyalty to his convictions.

He must also constantly ask himself if his convictions are correct."<sup>8</sup> And Dostoyevsky could not accept any convictions according to which only one-tenth of people should attain a high level of development while the remaining nine-tenths were merely means to an end.

Dostoyevsky's saying that "to write well it is necessary to suffer" has been much commented on and often interpreted to mean that people should undergo suffering as an end in itself. But Dostoyevsky was exhorting people to work earnestly and conscientiously, with conviction and dedication, whether the work was strenuous or joyful. He was appealing for a universal responsiveness. We all know that Dostoyevsky had had terrible moments of disillusionment, but we must not forget that he *overcame* them. His entire work is a testimony to this. Thirty volumes of it, without which we would all be poorer and weaker spiritually and morally. It is something our nation may take pride in. And it is one more evidence that in art there is no other way of achieving universal recognition except by being thoroughly national. Without that nourishment which national soil gives, no one will have the strength to reach the world summit. And the more national an art, the more vigorous will be the world response to it.

Karyakin disagreed with those who thought that in spite of everything the most important feature to be noted about Dostoyevsky was his affirmation of the individual and the nation. There is something special about Dostoyevsky's art, Karyakin said, an art embracing a profound, uncompromising and courageous truthfulness, which alone can save man. Dostoyevsky was fighting against mortally dangerous diseases threatening mankind, and for this his talents were labelled "cruel" by fastidious critics. Nearly a hundred years have to pass before what seemed dark in Dostoyevsky becomes clear. One needs to live in the second half of the 20th century to understand and to discover what had been understood and discovered by Dostoyevsky, to see what lies behind all his doubts and contradictions—a fervent love of Russia, a total rejection of the domination by one-tenth of mankind over the remaining nine-tenths, and a love of life which nothing could eradicate. For, after all, Dostoyevsky wanted to save the *life of people*, the life of real people living in *this* real world, *for the sake* of this world, and to save life by no other means than by making it more *spiritual*; he was urging people to perform a great *feat*.

In this connection *The Possessed* is of particular significance among Dostoyevsky's works. The prejudices and contradictions in the book are obvious and have long since been explained as being due to a confusion of revolutionaries, true socialists upholding the interest of "nine-tenths" of mankind, with careerists who sought to use revolution and socialism to attain power, who were ready to resort to lies, unscrupulous acts and violence to achieve their ends. We may

recall the words of Stepan Trofimovich which sum up this "devilishness": "They are all the sores, all the foul contagions, all the impurities, all the devils great and small that have multiplied... in the course of ages and ages."<sup>9</sup>

Some critics say that *The Possessed* is not a social novel because there are no "poor folks" in it. The best answer to this is that precisely Dostoyevsky has revealed in this "devilishness" a violent animus *against the mass of the people*. Left-extremism in the West, Maoism in China, ultra-right pro-fascist organisations, putsches of black colonels—these are phenomena of the same type.

In Kampuchea, recalled Karyakin (who had recently visited the country), ultra-left "devils" had managed to kill nearly three million people out of a population of eight million in a mere three and a half years. According to them, one million Kampucheans were quite enough to build a new society. This is "devilishness" with a vengeance, in a "chemically pure" form.

Karyakin then made a comparative analysis of *War and Peace* and *The Possessed*, the latter being the first of Dostoyevsky's works to appear after the publication of Tolstoy's novel. Could it be that *The Possessed* (apart from everything else) was Dostoyevsky's answer to *War and Peace*? The two books seem different in all respects: in subject and narrative style, in time and place, duration and pace, rhythm of action, the action itself... But nevertheless in both there is *art, realism, Russian realism*. In both there is truth, and pain for the suffering of the people (the "nine-tenths"), for Russia, for man and mankind. Each has *its own* conception of and *its own* way of fulfilling the same behest, which was stated by Pushkin: "The fate of a man is the fate of a nation."

We should not counterpose one novel to the other, but compare one with the other. The idea of *counterpoint* probably best suits our purpose here. In a symphony, two themes do not destroy or diminish each other, but enhance each other. They interweave, each shining forth more brightly by the other's side, each suddenly becoming clearer, fresher, more distinct, revealing a new depth to the listener. Here we have a magnificent counterpoint of two world outlooks imaginatively expressed.

**B. Bursov** (author of *Leo Tolstoy, Dostoyevsky's Personality* and other books) took issue with the category of the "totality of time" current in criticism, and the "measuring" of Dostoyevsky according to it. The concept of the "totality of time" was first introduced by M. Bakhtin.

My quarrel is not with Bakhtin, Bursov said, but with his followers who have simplified and coarsened what is actually a complicated process of his thought. They have been somewhat

unscrupulous in handling the idea for the sake of proving their own, rather dubious conceptions.

When the idea of polyphony is applied to Dostoyevsky alone, this tends to tear him away from Russian national tradition. Moreover, Dostoyevsky appears to stand in opposition to this tradition.

The Russian tradition is an unbroken and unfading tradition. Its continuity may be seen in the respect with which each writer spoke of his predecessors and contemporaries. Suffice it to recall what Pushkin said about Lomonosov, Gogol about Pushkin, Dostoyevsky about Pushkin, and Tolstoy about Russian novelists.

Bursov emphasised the importance of Russian and Soviet literary criticism for a correct interpretation of our literature by the Western reader. He found the polemics arising between Soviet and Western scholars on a number of problems at a symposium marking the 150th anniversary of the birth of Tolstoy, held in Venice, instructive. Western scholars tried to contrast the views of Tolstoy and Dostoyevsky on the Russian revolution, arguing that while both writers mirrored the revolution they assessed it from mutually exclusive points of view. Bursov said that he would call Dostoyevsky's method polemical realism.

And how different heroes of Tolstoy and Dostoyevsky are from one another! Tolstoy's hero says: I am guilty before the whole world and thus believe it is necessary to cultivate self-perfection. This is understandable: as a member of the landed gentry Tolstoy felt guilty before the peasantry and therefore before the whole world. Dostoyevsky's hero, on the other hand, believes that the whole world is guilty before him, having ruined his life and made him miserable. He yearns for not self-perfection, but self-assertion. It was Dostoyevsky himself who said that his main discovery as a writer was the *underground man*. This assessment by Dostoyevsky of himself is indispensable for an understanding of the national and world significance of his work. Tolstoy affirmed the sought-for truths in a forthright manner because at every period of his work he had a programme in which he believed, even if for that period only. Dostoyevsky, on the other hand, believed in what he strove for as much as he doubted it, and thus he was constantly arguing with himself, much more so than with all others including Turgenev, Chernyshevsky, and even Tolstoy, whom he placed before the rest of his contemporaries.

Dostoyevsky is constantly torn between faith in man and the world and doubts about man and the world. This accounts for the broad scope of his work, for in it he raises questions that are tormenting to him and to all of us, not only Russians but people throughout the world, drawing on world history for his purpose although invariably taking the realities of Russia of his time as a starting-point.

To correctly understand the work of Dostoyevsky as marking a definite stage in the development of Russian and world literature, said Bursov, it is necessary to consider Dostoyevsky in relationship to his predecessors and his contemporaries. The work of this great Russian writer is a part of the treasure-house of world culture, and therefore other peoples have a right to form their own opinions concerning it, which often do not coincide with ours.

**T. Motyleva** (author of *The World Significance of L. N. Tolstoy, The Achievement of Contemporary Realism* and other books) noted that in the 1880s Russian novels began to be widely translated and published in many countries. Russian classical literature immediately became a subject of sharp controversy and ideological struggle, a struggle which is still going on today. Dostoyevsky remains in the centre of it, with different social groups assessing his work differently.

In bourgeois criticism attempts have been made, and are still being made today, to cast doubt on the humanism of classical Russian literature, for humanism, beginning from the Renaissance, means (among other things) an affirmation of the individual, whereas Tolstoy and Dostoyevsky, so it is said, subordinate the individual to the people, the masses. The groundlessness of such judgements is obvious.

For us today, all that relates to Dostoyevsky's tragic errors—be it his hope in the good tsar or his sporadic fits of intolerance towards those who held different views from his own—is, understandably, the least important part of Dostoyevsky's legacy. But we should not forget that bourgeois critics try to use this anti-revolutionary aspect as a weapon with which to attack socialism.

Motyleva stated her own view on the problem of "Dostoyevsky and World Literature". We have now overcome the simplistic notion, she said, that in the West Dostoyevsky attracts only writers of a decadent orientation, such as Gide, Kafka and Sartre. It would be equally simplistic to assume that the opposite is true, namely, that in the West only progressive, realistic writers are drawn to Dostoyevsky.

The perception of Dostoyevsky abroad, and his influence on the literature of different countries are extremely varied. But amidst the diversity there is a predominant trend. Dostoyevsky played an important role in the forward development of realistic, democratic literature of our century. The worldwide influence of the great Russian writer can be gauged by the response which his work has evoked in the intellectual life of mankind, by tendencies towards convergence of art and ideas, tendencies which he established and upheld.

Sometimes the question is raised as to whether it is worthwhile going into the matter of Dostoyevsky's influence on writers abroad

who do not measure up to him in scope and who do not possess his genius. We can answer "no" and leave it at that. But that would be shutting our eyes to the problem, for Dostoyevsky's influence on world literature is made up of a multitude of specific facts with each of which we can take issue. But if our answer to the question is "yes", then we must consider each case separately taking into account differences in artistic levels and, what is still more important, differences in world outlook. For instance, between Dostoyevsky and Proust and between Dostoyevsky and Camus there is an ideological distance which we must not overlook, Motyleva said.

When researching this problem, it would also be useful to turn to essays, articles and journalistic pieces by Western writers since Dostoyevsky's influence largely extends over 20th-century people's thinking as well.

Motyleva recalled Anna Seghers' analysis of features that are common to *Crime and Punishment* and *War and Peace*, and John Gardner's remark in his book *On Moral Fiction* that Dostoyevsky and Tolstoy who set out to humanise man are for him an example. It is significant that the hero of William Styron's semi-autobiographical novel *Sophie's Choice* reads *Crime and Punishment* and compares his thoughts with the thoughts of Dostoyevsky.

Dostoyevsky broadened the realm of realism, introducing much that was new in the art of the novel. In this alone he exerted an important influence on 20th-century literature. Sometimes one can detect even in separate, minor aspects of the works of foreign writers a certain gravitation towards Dostoyevsky and a kinship with him.

In bringing the meeting to a close, P. Paliyevsky noted that there were many writers and scholars who were not present but who could have made a contribution to the discussion.

#### NOTES

- 1 V. I. Lenin, *Collected Works*, Moscow, Vol. 16, p. 323.
- 2 Karl Marx, *Economic and Philosophic Manuscripts of 1844*, Moscow, 1967, p. 130.
- 3 F. M. Dostoyevsky, *Complete Works*, Vol. 1, St. Petersburg, 1883, p. 373 (in Russian).
- 4 Georg Wilhelm Friedrich Hegel, *The Philosophy of History*, New York, 1900, p. 31.
- 5 Karl Marx and Frederick Engels, *Selected Works*, Moscow, Vol. 3, 1970, p. 337.
- 6 F. M. Dostoyevsky, *Letters*, in four volumes, Vol. 4, Moscow, 1959, p. 339 (in Russian).
- 7 Fyodor Dostoyevsky, *A Raw Youth*, New York, 1916, p. 265.
- 8 *Literary Heritage*, Vol. 83, Moscow, 1971, p. 675 (in Russian).
- 9 *The Novels of Fyodor Dostoyevsky*, Vol. 3, London, 1913, p. 615.



## Alliance of the Ultra-Left and Right Forces

YURI SHERKOVIN

In the latest large-scale anti-communist campaign mounted by reactionary quarters in the West the Soviet Union and other socialist countries are accused of participating in the international and national terrorism that has hit the capitalist world. And as might have been expected, all revolutionary and liberation movements are falsely declared to be "terrorist". In this way, as noted in the Report of the CPSU Central Committee to the 26th Party Congress, the more aggressive imperialist circles "have set out to achieve the unachievable—to set up a barrier to the progressive changes in the world, and to again become the rulers of the peoples' destiny".<sup>1</sup>

Paradoxically enough, the loudest voice in this chorus of lies is that of the new Washington Administration, although it is common knowledge that terrorism in various forms and manifestations is characteristic of American imperialism. Violence at home against persons holding dissenting opinions, as well as aiding and abetting terrorism on the international arena are now typical of American everyday reality. The *International Herald Tribune* has bluntly noted that over the past thirty-five years the US Administration has regularly used terrorism as a weapon of foreign policy.<sup>2</sup> And this terrorism links up with terrorism inside the country, once again confirming Lenin's conclusion that at its highest stage capitalism engenders and rears "reaction all along the line". This article tells of one of the forms of political terrorism in which the forces of reaction are interested.

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Over the past few years a wave of terrorism has swept Western Europe, the ultra-right and ultra-left groups competing in bomb explosions and armed assaults. In Italy alone, according to far from complete data, the number of crimes committed by terrorists allegedly "in the name of the people and for its freedom" exceeded two thousand in 1979. Scores of people were killed and many hundreds wounded. Lately the extremist groups in the FRG, Portugal, Spain, France and in some countries of Asia and Latin America particularly stepped up their activities. And each terrorist act, especially those committed by the ultra-left groups, was invariably given wide coverage by the mass media belonging to the right forces or controlled by them.

This phenomenon, which has been given the name "armed propaganda" (its author was Carlos Marigella, the Brazilian leader of the ultra-lefts), attracted the attention of numerous Western researchers. An extensive literature has even appeared on the subject in which bourgeois sociology and socio-psychology naturally try to distort the real reasons for this phenomenon, to use it in the interests of the ruling elite.

In 1963, the US magazine *Newsweek* reported an attack in Venezuela on an exhibition of French impressionist paintings. Four men with submachine guns broke into the exhibition hall in Caracas and before the eyes of numerous visitors, mainly schoolchildren and their teachers, seized Cezanne's "The Bathers", Braque's "Still Life with Pears" and two still lifes belonging to the brush of Picasso and Gauguin. One of the gunmen loudly informed the frightened public that they were taking these paintings not as common thieves. Their objective was to liberate Venezuelan oil from Yankee imperialism. "When we have won, we shall return the paintings undamaged," he declared, hoping to win sympathy and admiration and, most important, to publicise this extravagant act. Needless to say it did not lead to the liberation of Venezuelan oil, but the ambition of the four radicals to make headline news in the national, French and other newspapers was satisfied.<sup>3</sup>

The same tendency—to get as much publicity as possible—is evident in the activities of the separatist groups "Jura—mouvement de libération" in traditionally "quiet" Switzerland and the Liberation Tigers in Sri Lanka, in the kidnapping and murder of people by the West German Rote Armee Fraktion, in the raids by the Brazilian ultra-left group Action for National Liberation.

The striving for publicity, as also the readiness to grant such services, are clearly evident in the many episodes connected with the

kidnapping of hostages. Typical in this respect was the abduction of OPEC representatives during a conference in Vienna in December 1976. The members of the international terrorist group involved laid down as the condition of the release of their hostages that the Austrian radio and television broadcast the terrorist group's ideological platform. This demand was readily complied with by the authorities since, in the opinion of specialists, the publication of the text, drawn up in the pseudo-revolutionary cant of the ultra-lefts of the Maoist trend, would weaken sympathy for the left forces and directly benefit the rights.

The craving for publicity was such that two or three ultra-left groups, including even non-existent ones, each began to lay claim to authorship of one and the same terrorist act. Take the terrorist act of the Bretonne separatists on June 26, 1978. Ultra-lefts whom the French had never heard of before, claimed that they were the authors of the explosion at Versailles which destroyed enormous cultural values. Certain Revolutionary Workers' Group and Group of Struggle against International Unemployment likewise contended with each other for the palm of the "Versailles exploit". French bourgeois publications endeavoured to represent them as "communist", "red" groups directed from Moscow.

"Playing to the gallery" was evident also in the "crop" of terrorist acts in 1979 sensationalised by the bourgeois press: in the assassination of police officials in Athens by the Group of June-78, in the numerous bomb explosions in the area of the agrarian reform in the Portuguese province of Alentejo (often committed by neo-fascists who ascribed them to ultra-left extremists).

Publicity was also the aim of the Turkish terrorists when they dyed the streets of Stamboul in blood and of the ultra-left separatists in India when they carried out bandit raids in the north-eastern regions of the country and of the extremists of the New People's Army who exploded grenades during Easter mass in the Philippine town of Davao in April 1981. But no matter how different the concrete circumstances of these and similar acts, each one of them is played up politically, is utilised in the interests of the right forces. Nearly all of them are presented, in a greater or lesser degree, in an anti-communist and anti-Soviet spirit, and are accompanied by a clamorous campaign about the "participation of the USSR" in the activities of the ultra-lefts. This is taken advantage of by the right forces to press their political demands for "tough measures", the establishment of "strong governments", further restriction of the rights of the working people, curtailed as they are, which they won in their stubborn class struggle. On the other hand, the collaboration of the right-wing press with the pseudo-revolutionaries is aimed at splitting the working-class movement.

Besides, the leaders of the ultra-left groups, lacking a mass social

base, see in the bourgeois mass media the possibility, even if only on paper, of turning their small and uncoordinated organisations into powerful underground armies, fronts and brigades with frightening names. "Armed propaganda" has yet another function—to support and consolidate groups, often having no contact with each other or even unaware of each other's existence. On the pretext of secrecy the ambitious ultra-left leaders prefer not to disclose either the number of groups, or that of their membership, but with the help of the press try to convey the impression that their organisations are numerous, with many branches and that they have their people everywhere. This impression is subsequently spiked, but "armed propaganda", while it operates, serves, to a certain extent, to preserve this impression.

It is this kind of mutual interest that gave rise to the "armed propaganda" phenomenon which received the support of the major newspaper syndicates, broadcasting corporations and television companies belonging to the right. Already in the 1960s, when the allied relations between the ultra-left trends in the capitalist countries, on the one hand, and the bourgeois mass media, on the other, became a fact of political reality, the need arose to explain this seemingly strange phenomenon.

Its appearance was ascribed to the costs the scientific and technological revolution entailed and that it should therefore be accepted as an inevitable evil stemming from the blessing to have the right to be informed. The well-known Canadian specialist on information, Marshall McLuhan holds radio and television directly and wholly responsible for the explosion of ultra-left violence. In his opinion, the dynamic character of these media in itself is the cause of the continuous and deliberate publication of sensational reports, each one of which has to outdo the previous one in sensationalism. And if formerly such escalation was accompanied by a flouting of the norms of decency and morality, in the 1970s already electronics, according to McLuhan, allegedly became a self-contained force inciting the ultra-lefts to organise political pseudo-events, but with real blood and real deaths. From unprintable abuse, nudism and other shocking acts designed to portray "political protest", and readily broadcast and televised, the ultra-left extremists switched to violence which became the medium of political publicity sought by pseudo-revolutionaries.

Following McLuhan, this convenient viewpoint was taken up by Louis Heren of the London *Times*. Idealising electronics, he included, equally with the development of high-speed air transport and the appearance of new portable arms systems, the creation of the system of television satellites among the reasons for the escalation of ultra-left terrorism. In his opinion they guarantee rapid and wide publicity of terrorist acts, of "revolutionary" actions by small and separate groups aspiring to the role of "vanguard".

However, important logical links are missing in these technocratic arguments and in the conclusions based on them. The ultra-lefts are not controlling shareholders in companies exploiting costly electronic systems for multiplying and transmitting information. They are not represented on the boards of directors of corporations which dictate the information policy of broadcasting and television stations, newspaper syndicates and telegraph agencies. This notwithstanding, terrorist groups seeking publicity easily get reports of their acts "funnelled" into the "big press" where any explosion, shot fired in a street or arson is not simply "news", but rather masked instructions outlining in the minutest details the technology of terrorism. And the terrorists themselves are often portrayed as "strong personalities", as Robin Hoods of our time who are actuated by strong sensations unknown to the ordinary person.

The chorus of bourgeois theorists has been joined also by those who try, from positions of neo-Freudism, to explain this phenomenon "psychologically" and to put it down to the primordial aggressiveness of man. "Peace comes to us," writes Mariano Grondona of Argentina, "only after the previous war has exhausted the fury of aggressiveness. Man is not pacific. Sometimes he takes a rest and calls it peace... Every generation tastes the wine of violence and rests after it has satiated itself."<sup>4</sup>

Dozens of "serious" books and hundreds of magazine articles are the end result of the "theorising" of bourgeois interpreters. Their "search for the truth" is conducted from positions of hypocritical humanism since it is extremely advantageous to the forces of reaction to support the wave of leftist terrorism since they would have the public believe that those responsible for encouraging violence and exploiting it in their own political interests are the lefts—the communists and revolutionaries to whom love for their fellow-men is alien.

The authors of this kind of pseudo-scholarly studies draw terrifying pictures of "civil wars" and "guerrilla terrorism" launched throughout the world by Marxist-Leninists who, with the help of a certain global conspiracy, are trying to foist their ideology and power on mankind. For instance, Professor David Jordan of the University of Virginia, has asserted that "the Communist backed and trained terrorists... sought to establish a Marxist-Leninist state."<sup>5</sup> He is echoed by Sir Brian Flowers, Rector of Imperial College in London, who assumes that the desire of terrorist groups to make a profound psychological impact may induce them to use nuclear explosive devices. And in his opinion this is possible considering the expansion of the production and leakage of fissionable materials in the Western "nuclear" powers.<sup>6</sup>

The bourgeois theorists and executives, naturally, make no mention of their class interest in an alliance with ultra-left extremism.

They prefer to cloak it with arguments about freedom of the press, the competition between various press organs which in the scramble for an audience rush to publish sensational news stories although they are fully aware of what the consequences of such stories may be. But it is precisely this class interest that motivates the owners of the mass media in deciding how to present the "armed propaganda" of the ultra-lefts and in what "dosage". This interest manifests itself also in cases when such material ceases to be politically profitable to those who dictate information policy. The class instinct was quick to show itself when, in 1979, the management of the West German Bertelsmann Publishing House had to decide the question of the publication of the book *Die Herren des Morgenrauens* by the well-known writer Peter O. Chotjewitz. In this novel its author shows how, under the flag of struggle against the evil of anarcho-terrorism, the constantly growing police and repressive apparatus of the FRG persecute people who hold progressive and left views. Publishing House therefore decided that the novel could not be printed for literary, juridical and political reasons.

The observance of an unwritten agreement on coverage by the bourgeois mass media of the pseudo-revolutionary activities of the ultra-lefts has led to the paradox of duplication of the terrorist groups. Each one of them exists in two hypostases: one—in reality, another—on TV screens, in radio programmes, and in newspaper columns. In the United States many are familiar with the symbol of the notorious Symbionese Liberation Army, a seven-headed cobra, which was circulated in millions of copies. Every day people heard threats and ultimatums by this "army", broadcast by the commercial radio stations of San Francisco and its satellite towns. Even in its best times the "army" consisted of 12 persons, and after the arrest and conviction of most of its members in 1975, only three remained at large. However, the piquant details of the sexual and narcotic experiments of the "army" helped to bring it wide publicity and to give it an aura of mystical romanticism in its second, television-press life. The story of the abduction of Patricia Hearst by the Symbionists contained all the classic ingredients for "hot" news—a beautiful girl, rich parents, desperate scoundrels, a shoot-out during a bank robbery, the secret transformation of an heiress to a fortune of millions into a "red guerrilla" and a trial rich in exciting details.

In the numerous and extravagant acts of the pseudo-revolutionaries bourgeois propaganda finds an effective means of influencing the middle-class psychology. Herein lies one of the major reasons for the coincidence of the interests of ultra-left terrorism with the interests of the ruling class in the capitalist world.

The second reason lies in the system of reporting events connected with the struggle against terrorism. The bourgeois press has found an inexhaustible source of emotionally effective informa-

tion which creates an aureole of heroism around the anti-terrorist police squads of their countries. They are invested with traits of "courage", "disdain of danger", "presence of mind in critical situations". This propaganda line, first started in the USA way back in the Prohibition years and which lauded the police and the FBI as "staunch" and "incorruptible" fighters against gangsterism, did much to portray the gangsters in a sombre, romantic light. Later this line was continued by "police" literature which became a part of the "mass culture" of bourgeois society. However, what two decades ago was the fruit of the imagination of writers engaged in creating heroes of the James Bond type has now become a reality. Newspapers are filled with reports that read like war communiques. They abound in military metaphors and pictures of snipers in bullet-proof waistcoats. The police are thus represented as "valiant knights" defending the "democratic rights" of the people, rights which are virtually non-existent.

The third reason, and probably the most important one in the alliance of the "armed propaganda" of the ultra-lefts and the bourgeois mass media, is the anti-communist orientation of everything done by both sides of the alliance. Particularly played up here is the thesis that the socialist countries "support" the ultra-left terrorists. In recent years the bourgeois press has regularly been carrying reports alleging that the Soviet Union finances the Red Brigades operating in Italy.

The attitude of Communists to terrorism has always been consistently negative. Still way back in the 19th century, after a wave of repressions was unleashed against the German Socialists under an emergency law and the German anarchists J. Most and W. Hasselmann advanced the "propaganda by action" idea calling for violence and terrorism, Marx sharply criticised such views, as also did Lenin later.<sup>7</sup> According to Marx the weapon of criticism cannot be a substitute for criticism by weapons: material force must be overthrown by material force. But the question may be asked: is the terrorist "criticism by weapons" that material force which can overthrow the force of an armed bourgeois state? Marx answered this question unequivocally in the negative. "The Communists know only too well," Engels wrote, "that all conspiracies are not only futile but even harmful."<sup>8</sup>

The "propaganda by action" idea was given further impetus by the "noisy advocacy of terrorism" advanced by the Russian Socialist-Revolutionaries at the beginning of the 20th century. This advocacy in Lenin's politico-psychological estimation sowed "harmful illusions" in the working masses, that "terrorism 'compels people to think politically, even against their will,...' or that 'more effectively than months of verbal propaganda it is capable of changing the views... of thousands of people with regard to the revolutionaries and the

meaning (!!) of their activity', or that it is capable of 'infusing new strength into the waverers, those discouraged and shocked by the sad outcome of many demonstrations' and so on. These harmful illusions can only bring about early disappointment and weaken the work of preparing the masses for the onslaught upon the autocracy."<sup>9</sup> The draft resolution of the Second Congress of the RSDLP, which was written by Lenin, stated: "The Congress decisively rejects terrorism, i. e., the system of individual political assassinations, as being a method of political struggle..."<sup>10</sup>

The Socialist-Revolutionaries buttressed their theoretical views with propaganda and agitation activities, in conjunction with concrete terrorist acts. This is evident from the proclamations "To All Subjects of the Russian Tsar" and "To the Entire Working People from the Party of Socialist-Revolutionaries" issued by the fighting organisation and the Central Committee of the Socialist-Revolutionaries on the next day after the assassination of the Minister of Foreign Affairs, Sipyagin, on April 2, 1902, by Balmashov, a student of Kiev University. The combination of ultra-left SR terrorism with propaganda, which was systematically conducted right up to 1911 did not, however, yield the desired results. As Lenin stressed, "individual terrorist acts are *inexpedient* methods of political struggle".<sup>11</sup>

Lenin's assessment of ultra-left terrorism holds true to this day. Here it is pertinent to recall that already in the 1940s, that is, before the appearance of the modern mass media with their hitherto unprecedented swift impact, the working-class movement was faced with the danger of a similar kind of "alliance" but were able, basing itself on Lenin's conclusions, to assess it properly. Thus, the CC of the Communist Party of Chile was compelled to expel L. Reinoso, CC secretary responsible for organisation, for his adventurist policy of "direct actions". The shock groups formed by him raided bakeries and distributed the bread free of charge to the inhabitants in the vicinity. "Such a policy," wrote Luis Corvalan, "hampered the struggle of the masses, substituted for it struggle by small groups, isolated the Party, made difficult its emergence from underground and added to repressions, recklessly multiplying the number of victims of police raids."<sup>12</sup> The cheap popularity Reinoso and his followers sought, and which the bourgeois press readily created for them, only tended to discredit the ideas of communism and the real aims of the Communists. The CC of the Communist Party of Chile qualified such actions as treachery. But Reinoso's ideological heirs continued in his footsteps and by their irresponsible calls for civil war against the Allende government in effect helped Chilean reaction, to a certain extent, to engineer a fascist coup. The newspaper of the Chilean Trotskyites *Lucha obrera* was particularly active in this respect.

The Communist parties have always firmly and consistently condemned attempts to “theoretically” substantiate the usefulness of “armed propaganda” for the cause of the working class. Carlos Marigella, who, although his integrity and selfless devotion to the ideas of liberation of the people from exploitation and exploiters were beyond question, underestimated, in the opinion of those who knew him, the importance of political parties and work with the masses. In 1967, he was expelled from the ranks of the Brazilian Communist Party for his factional activities.

After Marigella the leaders of other ultra-left groups began to advance their own “theoretical substantiations”, to “perfect” the details of “armed propaganda”. Thus, the leaders of the American ultra-left terrorist group Weathermen obviously influenced by Marigella, drew up a set of instructions for their members according to which they were to provoke the police in every way possible to attack them in the presence of newspaper, radio and television reporters in order, by getting on TV screens, to win the sympathy of the broad public.

The “theoretical” elaboration of the problems of “armed propaganda” by the ultra-lefts continues, as before, to be carried out under the influence of two factors: that of the activities of the bourgeois interpreters of the problems of violence and of the syndrome of a distorted perception of themselves and of their role in the contemporary world, prevalent in the various groups of pseudo-revolutionaries.

The result of the operation of the second factor is that the ultra-lefts tend to have a hypertrophied opinion of their own importance for the destiny of society, to count themselves—the “fighting minority”—among the spokesmen of the interests of the exploited majority. The peculiar pathological character of the consciousness of the ultra-left groups manifests itself also in attempts to substantiate the ideological motives of their activities and behaviour psychologically, according to which acts of brutality improve one’s “general state”. The pathological character of their consciousness lies in the illusory goals of their actions, or to be more exact, in its political irrationality and virtual aimlessness, not counting, of course, the very rational, although carefully concealed, reliance on blackmail and extortion. Even some bourgeois researchers remarked on this in the early 1970s when they were extremely surprised to learn that the ultra-lefts wanted a revolution without aims and without a theory, which would show how such aims could arise in the process of revolution.

Foreseeing, as it were, the possibility of the “infantile disorder” of leftism growing into an epidemic of ultra-leftism and of the genesis of this dangerous phenomenon being ascribed to communism, Lenin very clearly formulated the idea that “violence is, of course, alien to

our ideals”.<sup>13</sup> Unable to refute this clear-cut and uncompromising idea bourgeois sociologists and political scientists resort to ideological forgery, lumping together anti-social elements, terrorists of various orientations, hippies and drug addicts trying, in the guise of “revolutionary” overthrowers of the bourgeois order, to get money for “potions” and true revolutionaries fighting for the liberation of the peoples of their countries. The bourgeois propaganda machine tries, not without political intent, to put the highly anti-social behaviour of criminals and semi-criminal elements—open robbery, arson, the abduction of people for ransoms—on the same level with the forced revolutionary violence of the exploited masses against their exploiters.

“Armed propaganda” is objectively harmful for the working class and its parties. Terrorism is detrimental to the very cause it claims it is defending. Marxist researchers note that it engenders splits in revolutionary ranks, results in isolation from the masses and alliance with the right forces, and that its propaganda serves, in the final analysis, the imperialist bourgeoisie and its allies in the struggle against the working class. The Argentine publicist, Fernando Nadra bluntly states: “In reality, terrorism as a method has nothing in common with Marxism... It is the antipode of our scientific doctrine of peace, society and revolution.”<sup>14</sup>

Communists most resolutely expose the attempts of the bourgeois propaganda machine to utilise left extremism to fan anti-communist hysteria. The need to wage a determined struggle against anarchist pseudo-leftism was stressed at the 23rd Congress of the French Communist Party as well as the fact that in the present conditions it was an objective ally of reaction. The need to intensify the struggle against left extremism was noted also in the report of Enrico Berlinguer, General Secretary of the Italian Communist Party, at its 15th Congress.

In connection with the increasing terrorist acts in Portugal in the spring of 1980 by the group calling itself the People’s Forces of April 25, a plenum of the Central Committee of the Portuguese Communist Party passed a special resolution which stated that any terrorist act committed allegedly in the interests of the working people helps to intensify reaction. The Central Committee called upon the people to wage a struggle against the anti-national policy of the government strictly within the framework of the constitution and democratic legality. Most local political observers are agreed that the so-called People’s Forces are a cover for reactionary elements which are seeking to undermine political stability and to lay the blame for this on the left democratic forces and the Communist Party. “There should be no doubt about it to us that the leftist provocations go hand in hand with the right counter-revolutionary provocations,”<sup>15</sup>



said Alvaro Cunhal, the leader of the Portuguese Communists, in one of his reports.

Orestes Ghioldi, a veteran of the Argentinian and international communist movement, writes that the communists are convinced of the objective political harmfulness of ultra-left terrorism. In his opinion, today, as at the beginning of the century, revolutionary transformations in the capitalist countries will be the result of the activities and effort of millions and not of the adventurist acts of the minority, even if this minority resorts to the services of the bourgeois mass media manipulating the public mind.<sup>16</sup>

It is no accident that the technocratic sophisms of bourgeois political scientists deducing that the "armed propaganda" of the ultra-lefts derives from the achievements of the scientific and technological revolution, or the arguments of the neo-Freudians about man's alleged inborn aggressiveness which creates a demand for the corresponding information, ignore the fact of the profound ideological, political and moral crisis of capitalist society. It is this political reality that is the source of present-day terrorism which flourishes on the soil of "the psychology of the unsettled intellectual or the vagabond and not of the proletarian".<sup>17</sup>

Ultra-left, like ultra-right, terrorism is of course the offshoots of the crisis of capitalist society, of the crisis of its values and the obvious irrationality of its development. Constant tension, maintained with the help of induced conflicts, meets only the interests of the ruling class. It is a means of restricting the sphere of activities of the democratic forces and preserving the power of the industrial and financial oligarchies. Just as inflation has become an instrument of the redistribution of surplus value in favour of monopoly capital, so terrorism has become a kind of instrument of the redistribution of political power in favour of the ruling elite and to the detriment of the democratic forces.

It is also no accident that the apologists of "armed propaganda" from among the theorists of ultra-left extremism choose to pass over in silence that as a political trend it has produced nothing but bombastic and hollow phrases ever since its emergence. "And today, on reading the passionate articles of *Znamya truda* about the heroes of S.R. terrorism," wrote Lenin as far back as 1907, "one cannot help saying to oneself: your terrorism, gentlemen, is not the outcome of your revolutionism. Your revolutionism is confined to terrorism."<sup>18</sup> It is as though these words of the leader of the October Revolution were written today. As in the past, so too today ultra-leftism does not present a serious danger to bourgeois society. On the other hand, it is precisely ultra-left extremism in its most diverse guises that can, like nothing else, divert the working masses, especially the youth, from the class struggle, direct their efforts in a false direction and in this way split the working-class movement. This was and continues to

be the main reason for the alliance between ultra-leftism, on the one hand, and the bourgeois machine of the mass media, on the other.

#### NOTES

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- <sup>2</sup> *International Herald Tribune*, June 30, 1977.
- <sup>3</sup> *Newsweek*, January 28, 1963.
- <sup>4</sup> Mariano Grondona, "La nueva guerra", *Vision*, November 1, 1976, p. 7.
- <sup>5</sup> *Current History*, February 1977, Vol. 72, No. 424, p. 59.
- <sup>6</sup> *The Times*, October 13, 1977, p. 3.
- <sup>7</sup> V. I. Lenin, *Collected Works*, Moscow, Vol. 5, p. 393.
- <sup>8</sup> K. Marx, F. Engels, *Collected Works*, Vol. 6, Moscow, 1976, p. 349.
- <sup>9</sup> V. I. Lenin, *Collected Works*, Vol. 6, p. 175.
- <sup>10</sup> *Ibid.*, p. 474.
- <sup>11</sup> *Ibid.*, Vol. 35, p. 238.
- <sup>12</sup> *Oktyabr*, No. 2, 1978, p. 44.
- <sup>13</sup> V. I. Lenin, *Collected Works*, Vol. 23, p. 69.
- <sup>14</sup> Fernando Nadra, *Reflexiones sobre el terrorismo*, Buenos Aires, 1976, p. 103.
- <sup>15</sup> *Avante*, April 24, 1980, p. 2.
- <sup>16</sup> Orestes Ghioldi, *Al encuentro de una compa a confusionista*, Buenos Aires, 1976, p. 16.
- <sup>17</sup> V. I. Lenin, *Collected Works*, Vol. 5, p. 327.
- <sup>18</sup> *Ibid.*, Vol. 13, p. 16.



### Peace Is Vital for the Conservation of Nature

EVGENI FYODOROV

In September 1980, the 35th UN General Assembly discussed the Soviet proposal "On the Historical Responsibility of the States for the Conservation of Nature for the Present and Future Generations". The Assembly adopted the Soviet draft resolution and instructed the UN Secretary General together with UNEP to prepare a report on the destructive effects of the arms race on nature and to canvass States concerning possible international measures to protect the environment.

Thus, environmental protection on a global scale has for the first time become a subject of inter-state relations. And this is only natural.

In our era of the rapid growth of the productive forces, the development of science and technology and the growth of production and consumption, environmental protection and the rational utilisation of natural resources acquire paramount importance for each country individually and for mankind as a whole. Let us take a look at the scientific aspect of this global problem facing modern civilisation.

Only some ten years ago this problem was still considered in the West from Malthusian positions, which maintained that there is not enough food on Earth for the already existing population leave alone for the population to be expected in several decades. If population growth is not stopped, mankind will in the near future be brought to the brink of a catastrophe as a result of a "population explosion", an "overpopulation bomb". And today, too, this notion has many advocates who see the way out of this crisis in preventing population growth, especially in the developing countries.

A simple extrapolation of increasing consumption in comparison to the planet's unchanged or diminishing resources was then replaced by attempts at making a comprehensive systems analysis of all the aspects of the development of human society in their totality. And so today major indicators of development (progress of industries and agriculture, birth and death rates, environmental pollution) are tied up into one system. Thus, using data for the previous years Forrester and Meadows assessed both the direct and reverse connections between these indicators and tried to foresee future developments. The results were discouraging. If the trends and character of present social development remain the same, then, according to Forrester and Meadows, in some 50 or 70 years our planet's population will reach 6,500 million people and will become extinct because of a shortage of natural resources and intolerable pollution. In their opinion, it is not only a matter of overpopulation but of a certain immanent tendency towards growth, inherent in every social system, every society. They therefore call for restricting development, the growth of production, and consumption and, of course, of the population. Only that can allegedly save mankind from a catastrophe.

The basic idea behind this and many other similar conclusions is that our planet's natural resources are finite.

Marxist researchers in their criticism of the said conclusions have noted that the character and trends of development of the different social systems should not be generalised, while political figures and scholars from the developing countries have pointed to the impracticability and inappropriateness of the call to stop development at the present widely different levels.

And yet it is obvious that our planet which is limited in size and natural resources cannot satisfy so large a population with all its needs. It should be noted, however, that there are no limits fixed once and for all to natural resources.

The capacity of each of the non-renewable natural resources is inevitably limited and decreases as it is used. So too is the usable part of renewable resources (fresh water, oxygen in the atmosphere, forests, fish in the ocean, etc.). But the possibilities to satisfy man's requirements depend not only on the existence and amount of the respective natural resource but also on the mode of production. We believe that the relationship between several concurrent processes should be taken into consideration. The depletion of natural resources—oil, coal, timber, etc.—is but one of them. The increased efficiency of resource utilisation is another process, and the systematic discovery of fundamentally new possibilities to satisfy man's requirements as a result of scientific and technological progress is still another.

Besides the natural-scientific and technical aspects, the concept of a natural resource has also a historical aspect. An element of the

environment becomes a resource only if and when the possibility and need to use it appear. Half of the cloth produced today is synthetic; uranium has become a source of energy which only a few decades ago seemed inconceivable. There is no doubt that this process will continue, and in the long run man will learn how to make everything out of everything. In the process of production one and the same amount of substance is only transformed and can serve man many times in different form, the ever broader use of salvage being a good example of that. In this way non-renewable resources become renewable and man's growing requirements for raw materials can be satisfied by accelerating the transformation process. That of course leads to greater energy consumption, but power engineering has always anticipated and continues to anticipate the exhaustion rates of energy resources. It is to be expected therefore that the total amount of substance and energy available will in future become the only and universal measure of natural resources.

As regards renewable natural resources one should take into account the possibility of their transformation with the aim of achieving greater efficiency. At the dawn of agriculture and cattle-breeding already when man began to work with some elements of nature (a field or a herd of animals) he got more products than from the same elements in their "solid" forms. In our opinion, such transformation should be carried out on a global scale. Take for instance the cultivation of food-fish in the ocean. Today up to 80 per cent of the entire annual increase in fish population is netted. It won't be long before the entire increase will be netted. Then either fishing will have to be stopped or the ocean will become fishless. Food-fish rearing in the ocean is practicable both technically and scientifically, but it requires a higher level of inter-state cooperation.

As a result of the concerted action of all the said processes and despite the depletion of natural resources the production of everything man needs reckoned per capita has been growing and continues to grow. Advanced methods of production increase the potential possibility of satisfying man's requirements. Advanced agrotechnics, for instance, if applied world-wide, would provide food for not only the entire existing population but for a population three times its present size. The differences between the potential possibilities and practical production of everything man needs are caused not by the availability of resources but by social and political factors.

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The main and really important thing here is how and for what purpose natural resources are used.

The exploitation of these resources in the interests of private owners and especially of foreign monopolies most often led to their

irrational utilisation and plunder and caused the greatest harm to the natural environment. The concept of "rationality" should be defined more clearly. In our opinion, only the utilisation of natural resources in the long-term interests of the people of the country to whom these resources belong can be called rational. Later evidently the utilisation of the Earth's wealth in the long-term interests of all mankind will become also rational, which, however, is possible only if and when a universal view is achieved. It is clear to everyone already today that an end should be put to the enormous and obviously irrational expenditure of natural resources and manpower for purposes which do not improve the well-being of mankind, such as the arms race, advertising, and manufacture of non-durable goods, etc.

Most alarming are the pollution and degradation of the environment caused by man's economic activities. Apart from affecting the health of man, it is fraught with upsetting the natural balance, i. e., the correlation between the processes determining the state of the environment that evolved in the course of millions of years.

The major changes in the natural environment brought about by human society—expansion of arable land at the expense of forests, land improvement, hydroprojects, etc.—have in most cases been beneficial to its development. At the same time there are numerous examples of negative effects with consequences harmful to man. Are they, however, inevitable consequences of the development of production, as the advocates of the limits to growth insist? Industrial or agricultural pollution, for instance, is not at all inevitable. Technological progress itself offers methods of combating it—purification technology and closed technological cycles in the first place. Modernisation, however, is very costly.

However, there is indeed one inevitable form of anthropogenic impact on the environment which, in our view, can set certain limits to the development of production or, to be more exact, to the growth of production and energy consumption. While matter in the process of production, as noted earlier, is only transformed, energy, within the limits of our planet, is lost forever. Produced and used for whatever purpose it turns into heat, changes the planet's heat balance increasing its balance temperature and then emanates into outer space.

The heat balance changes because the composition of the atmosphere changes. The increased amount of gaseous combustion products reduces Earth's heat emanation and, consequently, increases the balance temperature. In the long run the proportion of energy produced by burning minerals will be reduced, and possible too will be the detection of undesirable products of combustion. Heat emanation is inevitable in any activity, as is also its effect on the climate.

The World Climate Conference sponsored by the World Meteorological Organisation in 1979 has found that today already the climate is affected locally by anthropogenic factors. For instance, the temperature in large cities in winter time is some four or five degrees higher than in the suburbs. The Conference stated that anthropogenic changes in the global climate were to be expected in the near future due largely to the changed heat balance. The Conference, however, failed to specify just what these changes would be.

The constant hydrometeorological processes to be observed in the atmosphere, in the oceans and on the planet's surface form an intricate complex with numerous positive and negative feedbacks. The climatic records for the last ten or twenty millennia give grounds for believing that if the structure and basic features of our planet remain unchanged the said complex can assume different and not always stable states of relative balance. The transition from one state to another therefore may resemble self-sustaining reactions with a comparatively small initial "trigger" impulse.

It may be supposed that the global climate will begin to change when the "anthropogenic addition" to the heat balance will amount to one or two per cent of the energy coming from the Sun, i. e., when energy consumption will increase several score times to reach  $10^{11}$  kW. That may occur if a population of seven or eight billion people will consume energy at the current US rates.

It is interesting to note that that amount of energy is enough to produce food to satisfy the needs of 10 or even 15 billion people, provided agrotechnics remains the same.

Surely, we can consider that all this is possible within the next 100-200 years.

Are there any conceivable ways of overcoming the "energy limits"? We see two possible ways, and both are extremely difficult. One is the transfer of power-consuming industries into outer space, particularly to the Moon where "local" raw materials can be used intensively. The other is regulation of the climate with the purpose of either stabilising or improving it when the heat balance is upset. Of course it should be decided first which climate is better and for whom.

The above-mentioned World Climate Conference unanimously declared that the purposeful transformation of the climate was a reality of the future.

Thus, the limits of nature will not in the foreseeable future impede the progress of mankind even if it grows considerably in numbers. That has been repeatedly stated by both Soviet and Western Marxist scholars.

At the same time we have already approached a stage of development when the expanses and nature of our planet cannot be

regarded as something boundless, inexhaustible or ever stable. There are still, of course, big reserves of space, and prospected mineral deposits will grow, but the time has come when in satisfying mankind's growing needs we should pass from expansion (exploitation of new resources and still uncultivated territories) to intensification of man's interaction with nature as a whole, to increasing its productivity.

For science, and particularly for the Earth sciences, that means passing from descriptions, analysis and the search for ways of forecasting natural processes to calculating the anthropogenic impact on the latter and more broadly, to projecting these processes.

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In estimating the anthropogenic impact, science already now lags considerably behind the requirements of practice.

A direct study of the sickness rate in systematically polluted areas makes it possible to evolve methods of estimating the effect of the composition of the environment upon human health. That is a task of high priority.

Closely associated with that task is estimation of the damage to individual branches of the economy by environmental pollution. New man-made seas and vast and deep pits of open-cast mining often cause local damage, i.e., raise or lower the sub-soil water level. The methods of studying the mechanism and after-effects of such phenomena do not, however, meet the requirements of the national economy as yet.

Let us take a look at some examples of the USSR's efforts to prevent pollution, for which purpose huge sums are allocated. Where are they channelled?

Estimation of the possible changes in the various elements of the environment resulting from the implementation of the long-term national economic development plan and the impact of those changes on both the national economy and the population are becoming a paramount task of Soviet science today.

Along with estimation of unpremeditated changes in the environment caused by economic activities the elaboration of methods of influencing various natural phenomena in a purposeful way is assuming ever greater importance.

Such methods applied to local weather phenomena, in particular, have made the prevention of hailing a reality long ago already. The changes in weather are due to the instability often to be observed in the development of meteorological processes and the respective possibility of using the "trigger" effect when with a comparatively insignificant amount of energy or substance we can change processes of tremendous scale in a desirable direction. That, by the way,

applies also to possible purposeful changes in the climate earlier discussed.

The need apparently arises of creating large-scale mixed, natural and artificial closed ecological processes. Small artificial ecological systems exist already today. They are orbital stations and space ships with a store of non-renewable resources and a turnover of some renewable resources (air and water, for instance) maintained by Solar energy.

Thus, the natural resources of our planet offer vast opportunities for the growth and development of mankind. The point is how will they be used.

It is noteworthy that most Western scholars are also gradually coming to the same conclusion. Mesarovič and Pestel, for instance, in their book *Mankind at the Turning Point*<sup>1</sup> use a systems analysis to prove that human development is not only inevitable but also necessary; however, it must be coordinated. They believe that the rates and character of the economic development of various countries and cooperation between them on a global scale should be coordinated. They also note that the economic growth rates of the developing countries are accelerated to a certain extent at the expense of a reduction of growth rates in general and of the growth of consumption in the developed, "rich", countries in particular. Stressing the close economic interdependence of all countries, the authors try to convince the reader that such coordinated development is not just the only possible kind for mankind as a whole but also, in the long run, the most advantageous kind for each country in the context of its population's long-term interests.

Many other Western researchers are, as a matter of fact, drawing similar conclusions. Some of them use comparatively rough and simple estimates of the development parameters while others resort to sophisticated computations using systems analysis methods.

Among them mention should be made of the large group of scholars headed by the well-known American economist Wassily Leontief,<sup>2</sup> working on an assignment of the United Nations. They too have come to the conclusion that natural factors allow a considerable growth and development of mankind beyond the present level, with a concurrent narrowing of the gap in the levels of the advanced and the less developed countries; in any case, however, that development should be coordinated on a global scale and follow a definite programme.

To a considerable extent this change in views has been prompted by Marxist criticism and by the demographic forecasts made in 1973-1975 at the request of the United Nations. According to those forecasts, the growth of the planet's population, which is closely connected with the levels of technological development and urbanisation and other social factors, will slow down and in the 21st-22nd

centuries it will reach 12-15 billion, and become stable. Soviet demographers, by the way, had come to this conclusion much earlier.<sup>3</sup>

Estimates have also changed of the rates of exhaustion of non-renewable resources, of the role of secondary raw materials used in production, of the increase in the efficiency of social production as a whole.

Proceeding from that many Western researchers are therefore inclined to believe that the threat of a crisis, at least in the foreseeable future, is caused not by the insurmountable natural limits of the planet, population growth or the development of production and scientific and technical progress but by the present disorderly and uncoordinated character of human activities. And that means recognition of the supremacy of social and not of natural factors.

Such a conclusion naturally prompts to search for ways of preventing the crisis on the basis of corresponding social transformations. We shall deal with the views of Western scholars on this score later, noting meanwhile that these recent conclusions of theirs were in fact outlined and substantiated more than a century ago. The problem of the relationship between man and nature was first posed and discussed on a broad scientific basis by the founders of the materialist teaching of social development, Marx and Engels, in the very process of their elaboration of that teaching.

The limits of this article do not allow to consider in detail the wealth of material on this problem to be found in the works of the classics of Marxism and which merits a special study. But I cannot but recall Marx's pithy saying in one of his letters to Engels, which is often cited in Soviet ecological literature: "Cultivation when it progresses spontaneously and is not *consciously controlled...*, leaves deserts behind it..."<sup>4</sup>

That is to say, in the 19th century when not only businessmen but also scientists concentrated on the subjugation, the conquest of nature the founders of historical materialism in their works explained the necessity and the inevitability of another, optimal interaction with the environment.

Such was the theory and such is the practice of socialist society. In the very first months of Soviet power Lenin initiated important efforts in this direction. The task was set before Soviet scientists to make a detailed survey of the country's natural resources which had become public property, with the aim of their rational utilisation for the benefit of the people. Also the first steps were taken in establishing wildlife reserves.

Today the fundamentals of the rational exploitation of the Soviet Union's rich natural resources have been formalised in a number of laws (on forests, air pollution prevention, on waters, etc.) and decrees.

In his report "Fifty Years of Great Achievements of Socialism" Leonid Brezhnev noted that "The tempestuous growth of science and technology makes the eternal problem of the relationship between man and nature especially important and timely... We must preserve and beautify our land for present and future generations of Soviet people."<sup>5</sup>

We are now sufficiently equipped to gradually bring the national economy in accordance with ecological requirements and first of all with health protection demands. The necessity of that has been convincingly proved by the depressing experience of the industrialised capitalist countries (the USA, Japan, the FRG, etc.) where pollution has reached a dangerous level while its prevention is impeded by the specific features of the capitalist system.

A thorough study of the properties of the natural environment and the rational utilisation of natural resources are also necessitated by the rapidly growing scope and cost of various projects envisaged by the national development plan. The larger the planned project (a hydroelectric power station, factory, town or water reservoir) the more scrupulously are taken into consideration both the influence of elements of the environment (regime of river, mineral resources, seismic situation, climate, etc.) on their construction or utilisation and their future impact upon the environment. As the size of projects grows miscalculations in estimating their interaction with the environment can lead to increased damage because of miscalculated safety margins or size of mineral deposits, for instance.

Recent Party and Soviet Government documents therefore emphasise the importance of coordinating economic projects with the properties of the natural environment.

Since 1975 a special section dealing with environmental protection has been introduced in the Economic Development Plan of the USSR. Large sums are allocated to build installations for purification of waste waters and gases, to restore and develop forests, to improve forest fire control, to combat soil erosion, etc.

The Supreme Soviet commissions on environment annually consider reports on the implementation of the national economic development plan for the next year before they are submitted for approval to a Supreme Soviet session. The commissions make a detailed study of reports by all monitoring services and by some seven or eight ministries on the implementation of measures for environmental protection, the construction of purification installations, the introduction of wasteless technologies, the improvement of mineral excavation techniques, etc.

The need to make rational use of natural resources and improve the human environment is emphasised in Article 18 of the new Constitution of the USSR.

The monitoring of the environment is carried out not only by governmental agencies but also by numerous mass organisations, including branches of the Nature Protection Society in each of the Union republics, branches of the All-Union Geographic Society, and commissions of the local Soviets of People's Deputies on environment.

It is due to all those efforts that in the Ninth Five-Year Plan period already air and water pollution was reduced and today the concentration of many agents in the environment has become stable. Of course, this can be regarded only as an initial stage of the required regular reduction of pollution.

Thus, the USSR and other socialist countries are consciously and on an ever broader scale finding optimal forms of interaction with the environment.

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What is the situation like in this respect in other countries? The degradation of the environment in many industrial centres of developed capitalist countries assumed harmful dimensions in the 1950s and 1960s already. Everyone has heard of the notorious yellow fogs of London, the Los Angeles smog, the intensive air pollution in Tokyo, etc. Grossly polluted Lake Erie in the United States, the Rhine in Western Europe and many spots on the Japanese coast are often cited to exemplify the present state of the environment.

During the last decade under the pressure of the growing danger to public health and public demands many countries have adopted special laws and taken various steps to reduce pollution, which has undoubtedly yielded some positive results.

It should be borne in mind, however, that in the capitalist countries an objective contradiction exists between the interests of the industrialist, who wants to make production cheaper and not spend on purifiers, and those of the local population. That is why many Western firms move the "dirtiest" enterprises to developing countries.

That applies to the metallurgical industry primarily. Up to 70 per cent of the total dust exhaust, 90 per cent of carbon monoxide, 75 per cent of sulfur dioxide and trioxide, 30 per cent of nitric oxide and nitrogen dioxide and 70 per cent of fluorides are emitted when iron ore is prepared for blast furnaces. Ore agglomeration is the "dirtiest" process, and metallurgical companies are showing a heightened interest in imports of metallurgical raw materials ready for furnacing from Brazil, Peru, Liberia, India and other countries.<sup>6</sup>

That is borne out by world economic statistics. Typical in this respect is Warren Hoge's article in *The International Herald Tribune* describing the appalling pollution near the town of Cubatao, Brazil.

Hoge quotes Franco Benoffi, Managing Director of the FIAT-owned FMB Steel Company, as saying: "Foundry work is unavoidably polluting work, and it is no longer accepted by highly unionised workers of the so-called developed countries... In view of these considerations, the iron foundry is an activity more suitable to Third World countries."<sup>7</sup>

What is the situation like in the developing countries? They cannot as yet afford large-scale measures to achieve ecologically rational industries; therefore they have to disregard the problem for the time being. Most dangerous, and not only for tropical developing countries but also for all mankind, is the merciless felling of tropical forests. Some 70 acres are cut down every minute. If these rates are maintained, in some 40 or 50 years there will be no tropical forests in general and they are the main source of oxygen sent into the atmosphere as they can produce oxygen better than any other vegetation. Thus, this problem acquires global significance.

In fact, all the problems concerning the interaction of man and nature are now of international importance. The pollution of the Ocean by one particular country affects fishing in other countries, often very far away. Pollutants coming from industrial centres in the FRG, Belgium and France filter down in Scandinavia or even Eastern Europe and affect forests and fish in ponds and lakes there.

The desire of industrialised capitalist countries to exploit the natural resources of weaker states has more than once given rise to colonial seizures, aggressive wars and economic enslavement.

Hence the need for immediate and broad international cooperation in environmental protection and the rational utilisation of natural resources, which is one of the said global problems facing mankind today.

The Soviet Union has repeatedly called upon all countries to unite their efforts to solve those problems. And even more than that. Important international agreements have been signed as a result of its systematic and persistent initiatives. Among them are the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, the Convention on Long-Range Transboundary Air Pollution and other documents adopted by the European Meeting on the Protection of the Environment held at the initiative of Leonid Brezhnev. And finally let us again mention here the Soviet proposal "On the Historical Responsibility of the States for the Conservation of Nature for Present and Future Generations" adopted by the UN General Assembly.

The USSR actively participates in joint environmental efforts and has corresponding agreements with the CMEA member states and with many other countries, including Finland, the USA, France and Sweden.

As noted earlier, many researchers in the West also recognise the need for both such cooperation and for long-term coordinated development planning covering all countries.

Any programme of action presupposes some definite goal. What can be said about the goals of mankind in connection with the global programmes discussed?

This question was dealt with at length by E. Laszlo, a prominent American sociologist, in his book *Goals for Mankind*<sup>8</sup> published in the late 1970s. He tried to be objective and asked many governments, leading churchmen, trade unions and other mass organisations to formulate their goals for him.

The Soviet viewpoint was presented by Corresponding Member of the USSR Academy of Sciences V. Afanasyev, a well-known Soviet philosopher. He referred to the Programme of the Communist Party of the Soviet Union and the decisions of its 24th and 25th Congresses to show what sort of goals the Communist Party, the Soviet state and the Soviet people are striving to achieve. Representatives of some other socialist states provided similar replies and as a result Laszlo's book contains correct and concise definitions of the goals of the socialist countries.

The attempt to define the goals of the United States looks absolutely different. Here no goal was found of course which would be specified as one the whole American people or even the US Administration are trying to achieve. As a consequence Laszlo was obliged to analyse the different wishes of different groups of the American population and not the goal to the attainment of which the actions and resources of the United States are directed.

Hence the author's conclusion, which is quite clear to us, that countries with market economies have no definite goals at all, and consequently mankind as a whole has no goals either. That is bad, in Laszlo's view, and he therefore calls for a "revolution of goals", meaning the definition of the goals of human development.

Sometimes even concrete actions are suggested. The most comprehensive of such suggestions will be found in the work *Reshaping the International Order*<sup>9</sup> written by a large group of scholars headed by the eminent Dutch economist J. Tinbergen.

Speaking about the lack of prospects for the current trends and the character of social development of society (which, as a matter of fact, means lack of prospects for the capitalist system itself; the socialist system was not analysed at all), the authors point to the need to transform the world economy. With that end in view they suggest setting up a certain universal supra-national planning body which would guide the development of all countries. States, particularly the developing ones, should make over some of their sovereign rights to that body, "excessive" sovereignty being, in their view, the main

hindrance to universal unity. The transformation should be based on the common consent of the decision-makers, that is, governments, international organisations and first of all the United Nations, and... the multinational corporations.

It is noteworthy that during a discussion of Tinbergen's work in the United States in 1976 the participating decision-makers, including the then US Vice-President Nelson Rockefeller and heads of several major corporations, resolutely rejected the recommendations made by Tinbergen and his colleagues.<sup>10</sup>

Such suggestions are obviously naive and unrealistic. And still, many scholars in the West who by no means share the Marxist view, proceeding from their own standpoint and dealing with only one aspect of human development—the man-nature interaction—have come to an important and correct conclusion which has perhaps been most clearly worded by Barry Commoner: "Like the ecosphere itself, the peoples of the world are linked through their separate but interconnected needs to a common fate. The world will survive environmental crisis as a whole, or not at all."<sup>11</sup>

Strange as it may seem but similar conclusions were later also made as a result of their analysis of mankind's near future by the US State Department and the Council on Environmental Quality. In 1977, President Carter authorised the two bodies in collaboration with other federal agencies to study possible changes in the world population, natural resources and environment till the end of the century. This endeavour was to serve as "the foundation of our long-term planning", the Letter of Transmittal said. The group of experts produced a report of several hundred pages entitled *The Global 2000 Report to the President*.<sup>12</sup>

The *Report* contains nothing different from what had been written by Mesarovič, Leontief and other above-mentioned authors. However, it is not the opinion of individual scholars but the findings of representative bodies of the US Administration.

The conclusions of the *Report* which repeat those of Meadows, Mesarovič and others, begin with the following phrase:

*"If the present trends continue, the world in 2000 will be more crowded, more polluted, less stable ecologically, and more vulnerable to disruption than the world we live in now... Barring revolutionary advances in technology, life for the most people on earth will be more precarious in 2000 than it is now—unless the nations of the world act decisively to alter current trends"* [italics mine.—E.F.].

It goes on to say that food consumption in the developing countries will be reduced still further, the area of tropical forests will become 40 per cent smaller, while that of deserts will be increased, environmental pollution will become still more dangerous, up to 20 per cent of the existing species of animals and plants will become extinct, etc., etc. So what is to be done?

The *Report* says: "Vigorous, determined new initiatives are needed if worsening poverty and human suffering, environmental degradation, and international tension and conflicts are to be prevented. There are no quick fixes. The only solutions to the problems of population, resources, and environment are complex and long-term... The needed changes go far beyond the capability and responsibility of this or any other single nation. *An era of unprecedented cooperation and commitment is essential*" [italics mine.—E.F.].

The authors note that the situation is not hopeless:

"There are many unfulfilled opportunities to cooperate with other nations in efforts to relieve poverty and hunger, stabilise population and enhance economic and environmental productivity. Further cooperation among nations is also needed to strengthen international mechanisms of protecting and utilising the 'global commons'—the oceans and the atmosphere."

And finally: "Prompt and vigorous changes in public policy around the world are needed to avoid or minimise these problems before they become unmanageable."<sup>13</sup>

In short, the Department of State and other US agencies call for "unprecedented cooperation" between nations and "prompt and vigorous changes in public policy around the world".

Is this not, in essence, what Marx and Engels said when discussing the conditions for optimal man-nature interaction a century ago? Is this not precisely what Leonid Brezhnev declares clearly on behalf of our country when stressing that peace, detente and cooperation are needed not only to prevent war but also to solve pressing global problems?

It should also be noted here that the *Report* advances the questionable point that "there are opportunities—and a strong rationale—for the United States to provide leadership among nations" (in organising "unprecedented cooperation"), and that "the United States, possessing the world's largest economy, can expect its policies to have a significant influence on global trend".

It is clear to everyone that "unprecedented cooperation", long-term coordinated development plans for all countries, or joint solution of pressing global problems are possible only in the conditions of peace and detente.

Surely it is clear that a world conflict with the use of weapons of mass destruction would "remove" all problems of human development. Surely it is clear that only disarmament can provide the means needed for the long-term programmes proposed and for the solution of global problems.

The *Report* was presented to President Carter at a most unsuitable time. A great deal had changed in US politics during the three years that followed, changes that ran counter to detente and cooperation.



The present US policy is marked by a desire to achieve military superiority. President Reagan's decision to fully produce neutron weapons, of a new, barbarious means of mass destruction, shows that Washington is following a policy of unprecedented arms race and destabilisation of the international situation. All that, of course, does not facilitate but, on the contrary, impedes peaceful international cooperation in solving global problems.

All these remarks do not of course in any way detract from either the significance or the validity of the conclusion made by the Western researchers that only a change in social conditions, only close cooperation between nations can ensure solution of the global problems of human development. It is instructive though that they have come to the conclusions which were clear to the classics of Marxism already and which are to be found in the Peace Programme adopted by the 24th and developed by the 25th and 26th Congresses of the CPSU.

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In connection with the discussion of the further development of the man-nature relationship we believe that some ideas as to the time when definite stages in social progress can be expected are relevant here.

The Marxist-Leninist theory of social development, which studies the changes in the social structure under the influence of the development of the productive forces, reflects the law-governed pattern and, what is more, the inevitability of the transition to the closing stage of mankind's pre-history—to the socialist and then communist system. The laws of social development, discovered by Marxism-Leninism, are confirmed by the entire course of historical development.

One may also note the acceleration of social progress which corresponds to the acceleration of the productive forces. Pre-capitalist social structures existed for many millennia. Capitalism, which today is approaching its decline, arose and developed in the course of several centuries. Socialist social relations came into being and have been rapidly and progressively developing for a little more than half a century.

Can one say when these relations will become the principal ones in the structure of human society? Hardly, since modern society is developing under the impact of such complicated factors as the historical competition of the two main social systems, the national liberation movement, the class struggle in the capitalist countries, not to mention many other factors.

Taking into account the interaction of natural and social

processes, however, one can, in our view, specify a certain deadline after which the present "multiform" social structure can exist only in the conditions of peace, close cooperation and no arms race.

It is clear from the aforesaid that it is imperative to secure such conditions within the next few decades. The many assessments and calculations made by various researchers from various points of view underscore this. Otherwise the said global problems may present a serious, if not an unsurmountable, obstacle in the way of the development of society and cause crisis phenomena imperilling its very existence.

Leonid Brezhnev has repeatedly pointed to the need to fight for detente, disarmament and the preservation of peace, not only to prevent a world conflict but also in order to solve pressing global problems. "If there is peace, the creative energy of the peoples backed by the achievements of science and technology is certain to solve the problems that are now troubling people,"<sup>14</sup> he said addressing the 26th CPSU Congress.

The objective necessity of optimising the man-nature relationship imperatively calls for peace and cooperation.

#### NOTES

- <sup>1</sup> M. Mesarovič, E. Pestel, *Mankind at the Turning Point. The Second Report to the Club of Rome*, New York, 1974.
- <sup>2</sup> *The Future of the World Economy*, New York, 1976.
- <sup>3</sup> B. Ts. Uralnis, *The Marxist-Leninist Theory of Population*, Moscow, 1971 (in Russian)
- <sup>4</sup> K. Marx, F. Engels, *Selected Correspondence*, Moscow, 1955, p. 244
- <sup>5</sup> L. I. Brezhnev, *Following Lenin's Course*, Moscow, 1972, p. 35.
- <sup>6</sup> B. F. Bartov, *Modern Capitalism and Nature*, Moscow, 1976 (in Russian).
- <sup>7</sup> *The International Herald Tribune*, September 25, 1980.
- <sup>8</sup> E. Laszlo, *Goals for Mankind*, New York, 1977.
- <sup>9</sup> J. Timbergen et al., *Reshaping the International Order. A Report to the Club of Rome*, New York, 1976.
- <sup>10</sup> *Harpers Magazine*, September 1976.
- <sup>11</sup> Barry Commoner, *The Closing Circle*, New York, 1972, p. 291.
- <sup>12</sup> *The Global 2000 Report to the President. Entering the Twenty-First Century. A Report Prepared by the Council on Environmental Quality and the Department of State*, Washington D.C., 1980, p. 111.
- <sup>13</sup> *Ibid*, pp. 4-5.
- <sup>14</sup> L. I. Brezhnev, *Report of the Central Committee of the CPSU to the 26th Congress of the Communist Party of the Soviet Union and the Immediate Tasks of the Party in Home and Foreign Policy*, Moscow, 1981, p. 54.



### Social Problems of the Working Youth

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**From the Editors:** The Problem Commission for Multilateral Cooperation of the Academies of Sciences of Socialist Countries, which is called "The Working Class in the World Revolutionary Process" has worked out a comparative international sociological project entitled "The Life Careers of Young People in Socialist Society". Taking part in it were scientists from Bulgaria, Czechoslovakia, the GDR, Hungary, Poland, and the USSR. The present paper, based on their joint work, sums up some of the results of the study.

The need for further improvement in the planning and control of the development of socialist society poses major theoretical questions. Of particular importance are the activities of labour collectives and the training of reinforcements for the working class.

For the countries belonging to the Council for Mutual Economic Assistance the task of training and educating this contingent is essentially an international one. Its successful solution would enable the achievements of the scientific and technological revolution to mix with the advantages of socialism and to carry out the Comprehensive Programme for the further extension of cooperation and the development of socialist integration of these countries.

An important prerequisite for effective scientific research in this field is a consistent Marxist-Leninist approach to the study of the complex social problems of young people. Such an approach, based on the principles of historical materialism, presupposes concrete historical class-oriented analysis in which young people are regarded not merely as a specific age group but as a phenomenon conditioned by the concrete historical character of social relations. This helps to identify both the general and the specific in the problems of the younger generation in the CMEA countries. All that is progressive and valuable in the socialist community is used for mutual enrichment, and for raising the efficiency of social management.

Over the last two decades or so, the younger generations born and brought up under socialism have started on their independent careers. They have been moulded in the framework of a wider historical process which brings the socialist countries closer together. In this "elements of community are increasing in their policy, economy, and social life".<sup>1</sup>

Cooperation within the framework of the Council for Mutual Economic Assistance is linked with a concerted research effort in the area of machinery and technologies, division of labour, joint utilisation of resources, environmental protection, etc. All joint decisions have certain social consequences, that affect the mode and style of life and the structure of values and orientations. The results of these can be seen in the emergence of new needs and interests, particularly in the young people who are the most dynamic part of the population.

For the participants in the international research project the main objective was to investigate all aspects of the social awareness and behaviour of different groups of young people finishing their education and beginning their careers. They aimed to examine the new reinforcements of the working class in the socialist countries against a background of the development of productive forces and production relations, economic integration, complex demographic phenomena, development of mass communications, etc.

In embarking on this project, the participants firstly agreed on the need for comprehensive approach to the study—they wanted to analyse value orientations, professional inclinations, personal plans, etc.; their actual behaviour; social, professional, and territorial mobility; the life careers of the young. Working out such an approach is an extremely complicated scientific problem. One has to bear in mind that scientists from six European socialist countries endeavoured to carry this project out as a comparative international study. It is easy to see that difficulties grew in geometrical progression; comparison in some cases was very complicated: one had to take into account the great differences in education and professional training, terminology and official statistics.

The international project was intended to study the problems of the working youth in the conditions of existing socialism. This study could be carried out effectively only by using relevant methods. In this way a concrete analysis of phenomena and processes taking place in the social consciousness, psychology, and activity of different social groups could be made. It is precisely this approach that creates the actual premises for a profound and concrete understanding of the problems of the younger generation.

The theoretico-empirical nature of the comparative international study conditioned joint elaboration of the programme and determination of the goals and problems of research, of methods and

procedures ensuring the obtaining of reliable, representative, and comparable data. The Council of the International Research Project was set up to investigate these objectives. It included representatives of all the national research groups. Regular sittings of the Council coordinated and approved the principal documents of the research—questionnaires, interviews, codes, schemes of statistical processing and other materials. This ensured a certain degree of unity in the realisation of the project in all the countries.

After the data had been collected and the results analysed by computers, in accordance with the adopted programme, a unified international information bank was organised. It was partially represented by computer programmes and partially by ready-made tables. Later it was complemented by government statistical data and other similar information supplied by each member country.

It was decided to divide the research amongst the participants in the international project, with each taking up a separate specialised problem. Each national division of the project analysed and described the data pertaining not only to the country which it represented but also to other member countries. Areas for investigation were drawn up as follows: problems of professional self-determination confronting young people were worked out by the Soviet research group; young people's educational orientation by Bulgarian scientists; the study of the role of education in various spheres of young people's life was taken up by the Czechoslovak division of the project; the subject of actual beginning of labour activity, by the Polish participants; the problem of choosing a career in life, including social and professional mobility of youth, by the Hungarian research group.

This mode of interpretation involved certain difficulties for researchers. At the same time this new and, as we believe, higher level of scientific cooperation was made possible by the successes achieved on the basis of integration of the socialist countries.

This project is one of the first attempts to organise a comparative multilateral international sociological study of the problems of the working youth in socialist countries. The participants in the project realise that they have succeeded in analysing only some of the problems of the younger generation and that the standard of theoretical generalisations is dissimilar. It would also be quite wrong to extrapolate the results obtained to areas beyond the corresponding general totalities. Some of the generalisations are tentative and debatable, while some of the data require additional empirical checking and new research.

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The rapid development of productive forces, improvement of the structure, extending the scale and increasing the economic efficiency

of production on the basis of scientific and technological progress, raising the productivity of social labour have determined the dynamics of the growth of social production in the socialist countries during recent years. This served as the basis for evening out the economic development levels of these countries and for raising the well-being and cultural standard of their peoples. At the same time, just as at the previous stages of socialist construction, this movement was not always an even one. There were differences in the initial levels of the socio-economic and cultural development of these countries together with a number of other factors.

The demographic factor has always played an important role in society. However, in the socialist countries of Europe its effect on the social and economic processes has become particularly noticeable in the past decade and in the 1980s. The variations in population were largely determined by the "demographic echo of the war". Since 1945 and particularly in the first half of the 1960s there was a considerable drop in the birth-rate. This was caused by the drop in the small numbers of young parents born in the years of the Second World War. Now, as the demographic wave comes rolling over the generations, many socialist countries in Europe are entering the period in which the numbers of young people at an active age and correspondingly their percentage of the population decrease.

Late in the 1970s, the generation born in the years 1956-1960 began their working careers; it was a very large group in the USSR, but all the other countries experienced a drop in comparison with the previous five-year period. The children born in the years 1961-1965 are now approaching the start of their careers but their numbers are smaller. Leonid Brezhnev pointed out that "the effect of demographic factors stemming from the consequences of the last war will lead in the 1980s to a steep drop in the inflow of the able-bodied population".<sup>2</sup>

The fact that in most countries the great increase in the able-bodied population has now come to a halt creates a situation at the start of a working career quite different from the previous period. Now, a much greater proportion of the younger generation will have to be used as replacements for those who are coming up to the age of retirement. A growth in the numbers of employed in certain branches or professions will only thus be possible at the expense of other branches and professions, if one discounts the employment of those who were earlier occupied in housekeeping and on their personal plots of land. In some countries these latter resources have practically been exhausted.

Objectively, all of these factors greatly increase the need for an earlier and more complete involvement of young people in working activities. However, other tendencies counteract these factors. The scientific and technological revolution requires, undoubtedly, a

considerable raising of the standards of training the work force. More time should be spent on the general education and vocational training of workers before they become engaged in professional labour. On the other hand, precisely young people determine the population reproduction, i.e., the state of future labour resources. This also requires considerable expenditure of time and, apparently, will prevent a marked share of the young population from actively participating in the social economy. As a result, a relatively small group of young people will, in the near future, experience a considerable educational, professional, and demographic strain.

The economic and social development of the socialist countries of Europe is subject to the contradictory influences of a great many factors; it is dependent to a considerable degree on the moulding of reinforcements for the working class, on training young people for employment, and rational distribution and utilisation of the work of young men and women. A great role is played here not only by the objective characteristics of activity but also by the subjective factors—value orientation, personal plans, and motives of behaviour of young people.

The growing common elements in the socialist countries include not only economic, political and social development, but also the way of life, and the emergence of new needs and interests. Also noticeable in these countries is the similarity of the problems which inevitably arise in the course of social development.

The study has shown that everywhere in these countries a contradiction arises—a gap between the objective needs of society for its work force in different branches of the economy, and the professional careers that young people plan for themselves. The polling of young men and women who will have to fill the vacancies at work places, universities, and technical schools, shows that as a rule, most young people choose the most attractive professions for work or study, while the need for workers here is not very great. Thus, the number of applicants far exceeds the number of vacancies at the top of the pyramid. Contrariwise, the number of young people who want to work in the professions that are in their view the least attractive is minimal. The number of vacancies is greater here than the number of applicants.

In view of this, the problem of optimal correlation between the objective needs of society for work force in different branches of the economy, and the professional plans of young people, naturally assumes a great theoretical and practical significance. It has a direct bearing on the destinies of millions of young people.

Socialism creates opportunities for overcoming these disproportions not only by using the mass media but also by gradually adapting the system of vacancies to benefit the population's interests. In other words, owing to the socialisation of production and

planning of the entire economy, possibilities are created for a conscious and planned reduction or even elimination of different areas of the less attractive professions. This would be possible by means of mechanisation and automation.

These contradictions between the subjective and the objective, between aspirations and reality are not only encountered in the question of professional choice. The same thing happens in the field of education and in the need for specialists determined by the level of development of society; on the one hand there are the aspirations of men to migrate to larger cities, against the real needs and distribution of labour resources, on the other. This is also true of the disproportions in consumption—between the population's demand for certain commodities, products, and services, and their supply. These contradictions are a manifestation, we believe, of the basic contradiction of socialism—the contradiction between the growing needs, in the widest possible acceptance of the term, covering labour, education, geographical distribution, consumption, everyday life, career, and the actual possibilities that exist.

As shown by the study, the varied and complicated processes in today's society cause specific orientations, which are first of all assimilated by young people, as they are the most receptive and dynamic part of the population. In this context we should point out some interesting results obtained in the analysis of educational orientation. In all the countries, different groups of young people have a very high level of these orientations. The desire to continue their education was expressed by 47.4 per cent of those examined in Hungary, 49.4 per cent in Czechoslovakia, 50.5 per cent in Poland, 51.6 per cent in Bulgaria, 66.2 per cent in the USSR. The similarity in the intentions as regards education will be even greater if we allow for differences in the educational structure of different countries. This similarity is primarily explained by the uniformity of prevailing conditions, possibilities, and perspectives created by the socialist order which encourages the growth of culture and development of personality.

The desire of young men and women for education cannot be interpreted from utilitarian positions; for representatives of different social groups largely regard it as an end in itself. Included in the system of life values, education is a necessary element towards the perfection of personality. In this sense, the desire of the general population to become more educated can be regarded as an important achievement of real cultural revolution. The intention to restrict one's education to a level below secondary school is practically absent from the aims of the working youth (one to two per cent of those examined in all the countries); on the contrary, most young people expressed a desire for secondary (general and special) education.

The study examined the various connections between study aims and social, professional, educational, sex and age differences. Let us consider some of them. What stimulates one's aims in life, a high or a low level of education? The results of the international study show that the answer is ambiguous. At what level of education do young people mostly express a desire to continue studies? The least interest for education in all the countries is shown by "undereducated" young people—those who haven't even completed secondary education. Although that is a very small group (between one and two per cent generally, four per cent in Hungary), the rousing of interest for knowledge remains an important educational task. The greatest desire for continuing education in Bulgaria, Poland, and the USSR was expressed by young people who have graduated from secondary and classic schools—the figures here are higher than the corresponding indices both for persons with incomplete secondary and with higher education.

The general indices of the desire to continue education naturally conceal a variety of intentions—raising the general educational level as well as receiving professional training, mastering a profession requiring greater skill and knowledge or a speciality of the same level but of a different type, and for some persons this desire expresses a general inclination for raising their cultural and educational level.

In all the countries, with the exception of the USSR, men are by about ten per cent more education-oriented than women. Of the young Soviet women examined, more than two thirds expressed a desire to continue their education, while in Bulgaria, Hungary, Poland, and Czechoslovakia the figure is 45 to 47 per cent. This correlation is primarily a reflection of the actual status of women. As shown by the census, young women in the Soviet Union had begun, by the 1970s, to attain higher levels of education than men. In the past decade this trend seems to have grown. In the other countries in the higher education system the attainment of women is lower than men and in some countries this also applies to secondary education. However, one may expect a growing interest in education along with a higher level of attainment of women, which proceeds at a higher rate than in other countries. This study provides evidence of this: women with secondary and higher education in Bulgaria, Hungary, and Czechoslovakia have practically the same level of interest as men, and in some cases an even higher one.

The international study has shown that in the socialist countries a higher level of interest has been shown by the working young people in higher education. A desire to get higher education was expressed by 25.9 per cent of young workers and 44.2 per cent of office workers interviewed in the USSR; 32.3 per cent and 31.8 per cent respectively, in Bulgaria; 13.3 per cent and 35.4 per cent, in Hungary; 8.1 per cent and 42.4 per cent, in Poland; 2.8 per cent and

17.8 per cent, in Czechoslovakia. These are rather high indices, if one takes into account that it was an older age group interviewed not seventeen-year-old boys and girls, who are liable to aim rather high. The interviewees had already experienced life having had a profession and many years of working experiences.

The social need for specialists with higher education in these countries will not be expressed, apparently, by the above proportions either now or in the nearest future. The study of subjective intentions in this field again reveal a disproportion between aspirations and reality, showing that the growth of educational orientation is not only positive in nature. One of the results of the study is not so much a complete explanation of the phenomena established as formulation of new research problems and questions that will require a special, methodologically more sophisticated analysis. It is important to achieve a structure of educational orientation that ensures both the interests of the individual and the needs of society.

These questions become even more complicated if we take into account that educational orientations are different within different groups of young people in various countries. The data show, for instance, that the percentage of educationally oriented young people in the USSR and Bulgaria is higher than in Hungary and Czechoslovakia. What are the reasons for that? How is this connected with the level of wages and the standards of life? All these questions require additional study.

Educational orientations are closely linked with the attitude of young men and women to various kinds of professional activity and to the prestige of different occupations. Their study also formed part of the international project. It showed that young people establish a kind of scale, hierarchy, of different occupations, depending on their scales of preferences (different for various classes, social groups, and regions). For the thousands who make important decisions such as choosing their profession, changing their place of residence, changing jobs are guided by these assessments, and this scale of prestige.

In all the countries covered by the study, young people evaluate professions requiring mental labour higher than those involving physical labour. The scientific and technological revolution has stimulated, particularly among young people, the growth in prestige of professions in the field of science, modern technology and the humanities. Among men interviewed in the USSR, the most popular professions were medicine, engineering, writing and sea navigation; in Bulgaria, engineering, secondary school teaching, medicine and journalism; in Hungary, engineering, physics, writing, and teaching. The least prestigious occupations for men in these countries are those concerning the everyday services, "women's" specialities, and office work. Among women the three least prestigious professions

are: in Hungary, tractor-driver, mason, metallurgist; in Bulgaria, mason, waiter, tractor-driver; in the USSR, waiter, painter, and accountant. There are certain differences between countries. For instance, the occupations of shop-assistant and waiter are regarded higher by young people in Hungary, and that of tractor-driver, in the USSR. Nevertheless, the raising of the prestige of these professions everywhere remains an important task.

In the course of joint research, considerable attention was given to personal plans and value orientations, and also to the preliminary career decisions of young men and women. Various factors determining the actual choice of occupation were thoroughly examined—such as school education, place of residence, parents' social status and educational level, sex, etc.

The choice of occupation in the socialist countries has an essentially distinctive feature. Owing to the dominance of social ownership of the means of production, planned development of the economy and planned distribution of labour resources, conditions are created for more effective use of labour. The growth of a socialist economy creates premises for an ever freer choice of occupation according to an individual's vocation and inclinations. This is due to scientific and technological progress, enormous and continually growing needs of the people's economy for skilled personnel, the growing role of science, expansion of the system of education, its reorganisation and adaptation to the needs of industry and personal interests. These conditions work towards the complete realisation of individual decisions and contribute to the elimination of external forces that shape the destinies of the young. At the same time, certain differences are inevitable, for example, in the social background of students in various types of educational establishments, in the choice of profession and in mobility. These will remain as long as differences exist between town and country, between mental and manual labour, in remuneration, in the educational and cultural level of families, in the location of educational establishments and the level of teaching, etc.

Analysis of the relationship between social origin and educational level of young people of different social backgrounds beginning their careers, shows that the differences in opportunities are not so great, compared with similar indices in developed capitalist countries. There is a common tendency in all the countries: children of manual workers and, partly, children of office workers without special training, more often began their career with an incomplete secondary education and some professional training on its basis. Children of office workers began their careers after receiving secondary or higher education. Within these two groups the growth in the professional level of the fathers was accompanied by a growth in the

real opportunities of the children to get a more comprehensive education.

It should be borne in mind, however, that the systems of employment, of professional training and education offer young people in the socialist countries a chance to correct errors made in the first choice, to continue their education, change their profession, etc., at subsequent stages. At the same time, certain differences in the most typical and probable ways of acquiring education by young people with different social background choosing an occupation remains inevitable for the time being. A systematic study of these problems is undertaken with an aim to work out compensatory measures for children from families with a low level of education and culture and for rural dwellers.

The first decisions taken by young people at the start of their career are closely linked with the system of education and professional training. In fact, we are dealing here with a whole series of choices largely dependent on the level of education attained, which in their turn stimulate a desire to continue education and professional training. They implement young people's specific orientations, reflecting the length and level of obligatory education and the nature of basic professional training. The choices between going to work or continuing education, discontinuing work to take up study or combining work and study, etc., prove to be quite distinctive in young people of different ages and social background. Thus, in the USSR, younger men and women widely combine work and study (particularly girls, of whom 21 per cent studied without dropping work at the age of 20). Night schools and extramural departments of educational establishments retain their significance here, for the more mature age-groups as well.

Socio-economic development, the complex demographic conditions under which younger generations in the socialist countries begin their career, the specific orientations and behaviour of young men and women themselves, the specificity of the practical ways of solving contradictions between the subjective and objective factors in these countries—all of this affects young people's social and occupational mobility.

The scope and characteristic features of mobility are quite obviously determined, first of all, by the changes taking place in socio-economic relations. The cardinal changes resulting from socialisation of production led to the disappearance of whole classes and the emergence of new strata. This resulted in changed relations between them. A new social structure in society has emerged. The ongoing processes of social and professional mobility are also based on changes in the material foundation of production. This determines the shifts in the branch structure of the economy, changes in

the content and nature of labour, education, professional training of workers, etc.

Among young people occupied in material production, this mobility is very high in all the countries under study. At the time of the poll, 78 per cent of those polled in Poland, 70 per cent in Bulgaria and Hungary, 64 per cent in the USSR and 59 per cent in Czechoslovakia were engaged in work that differed from that of their parents. The study of the degree in which groups differing in the character of labour drew reinforcements from their own ranks or, conversely, attracted elements from other strata, shows that these social-professional groups of the population are largely open ones: there is not a single one here in which the parents of most young people would belong to the same group, that is, for which internal reproduction would be characteristic.

The result is a considerable exchange between the elements of the strata. First of all, there are rapid structural changes. Their direction and scope determines the basic tendencies in the movements of young people in different countries.

Sociologically, of great importance is the question of the formation of reinforcements for the intelligentsia. The empirical data show that young intellectuals working in material production come from almost all walks of life. Among specialists with higher education, only 19.3 per cent of those polled in Bulgaria; 31.6 per cent, in Hungary; 23.7 per cent, in Poland; 38.2 per cent, in Czechoslovakia; and 22.1 per cent, in the USSR, are those whose parents belong to the same group. For the children of industrial and agricultural workers the figures are, respectively: 47.9 per cent, in Bulgaria; 57.2 per cent, in Hungary; 44 per cent, in Poland; 23.6 per cent, in Czechoslovakia, and 45.5 per cent, in the USSR.

Considerable inflow of industrial and agricultural workers joining the intelligentsia is primarily explained by a large growth in the numbers of intellectuals during recent decades in these countries. Besides, it is important to note that, despite the differences in the opportunities that young people of different backgrounds have for joining the intelligentsia, not all children of intellectuals remain in the same stratum. Moreover, considerable scope of movement to other strata is characteristic of this group of young people. Moving in to the working class goes on on a mass scale. Of those whose fathers were specialists with higher education, 25 per cent remained in the same stratum at the start of their career and 63 per cent moved into the working class in Bulgaria, 24 per cent and 33 per cent respectively, in Hungary; 15 per cent and 34 per cent, in Poland; 23 per cent and 22 per cent, in Czechoslovakia, and 25 per cent and 64 per cent, in the USSR. We see, thus, that the percentage of workers leaving the intelligentsia for the working class is everywhere greater (particularly in the USSR and Bulgaria) than the percentage of those

remaining in the same stratum. Thus in all the countries the intelligentsia is, to a considerable degree, an open stratum.

Mobility of young people is not over when they take up their first job. Of considerable importance is also the correction of the initial decisions, professional advancement, changes of occupation and place of work and residence in accordance with the personal plans and needs of economy. That is, mobility in the course of the young people's working activity. The scope and direction of this mobility is directly regulated by changes in the economic structure of society; in fact, they reflect these changes and can serve as indices of the rate, scope, and character of the techno-economic changes in different countries.

Comparing the group (as regards the character of labour) to which young people belonged at the beginning of their career and a few years after (at the moment of polling), one may draw the following conclusion: one of the dominant factors is that a considerable part of young people who began their career as low-skilled workers later gave up this activity: 74.5 per cent in the USSR, 71 per cent in Bulgaria, 57 per cent in Hungary, 48.6 per cent in Poland, 15.7 per cent in Czechoslovakia. Of these, 48.8 (of the 74.5) per cent passed into the group of medium-skilled workers (trained ones) in the USSR, 45.9 per cent in Bulgaria, 43.5 per cent in Hungary, 45.8 per cent in Poland, and 3.7 per cent in Czechoslovakia. Subsequent transitions into groups of highly skilled workers and intellectuals are significant in Hungary, Bulgaria, and the USSR.

On the whole, the number of young workers moving into the higher education group is considerable: in the USSR 9.6 per cent of those who began their career as workers became intellectuals, 4.2 per cent in Bulgaria and Hungary. Lower figures in Poland and Czechoslovakia reveal the lesser role played by evening courses and extramural departments in the further education of the intelligentsia and seem to reflect differences in the approach to the role of higher education in solving social problems and the tasks of raising the intellectual potential of society.

Under the conditions of the scientific and technological revolution, the problems of professional self-determination and moulding of the young people in the socialist countries assume particular importance. Young men and women embarking upon an independent life are influenced by the dynamic development of socio-economic, demographic, and cultural conditions together with the complexity and variability of the personal plans and aspirations. Besides, the higher the level of development of society, the greater the freedom it offers to young people in the matter of realisation of their life plans. The more variants each of them has at his or her disposal, the more difficult is the choice of profession. Hence the

significance of the assistance which youth, party, planning, and economic organisations and educationalists offer young men and women in professional orientation and employment. Hence the importance ascribed to the study of personal plans and intended careers, to the generalisation of vast and varied experiences in the solution of young people's problems in the countries of the socialist community.

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The international study has made substantial contribution to a more comprehensive and concrete conception of the social problems of the working youth in the countries of the socialist community and of the contradictions into which young men run at the beginning of their career. The tendencies in professional self-determination, in the choice of profession, in social and professional mobility have also been examined. A number of problems have been singled out, which served as the basis for formulating a number of questions and hypotheses and which require new research into the social laws of training workers in the socialist countries.

"The Guidelines for the Economic and Social Development of the USSR for 1981-1985 and for the Period Ending in 1990" adopted by the 26th CPSU Congress pose important theoretical and practical questions before researchers in the problems of Soviet youth. This has motivated the decision of the scientists of the socialist countries to carry out in the current five-year period a new international research project "Young People and the Working Class". This will be dealt with by the Problem Commission for Multilateral Cooperation of the Academies of Sciences of the Socialist Countries "The Working Class in the World Revolutionary Process".

#### NOTES

<sup>1</sup> L. I. Brezhnev, *Our Course: Peace and Socialism*, Moscow, 1977, pp. 80-81.

<sup>2</sup> *Ibid.*, p. 243.



### A GOVERNMENT AWARD FOR THE INSTITUTE OF ECONOMICS

The Institute of Economics, USSR Academy of Sciences, has been awarded the Order of the Red Banner of Labour for its achievements in the advancement of economics and the training of researchers. The meeting on the occasion of the presentation of the high award to the Institute's staff took place on May 25, 1981, in the House of Scientists in Moscow.

The meeting's presidium included the leaders of the USSR Academy of Sciences, noted Soviet economists, and representatives of Party, government and mass organisations of Moscow.

The meeting was addressed by M. Zimyanin, Secretary of the CPSU Central Committee. He said that in accomplishing the tasks put forward by the 26th Congress of the CPSU, the Communist Party assigns a special place to science, which is exerting an ever-increasing impact on the development of the material and moral potential of socialist society. Established in 1930, the Institute of Economics constitutes an important element within the system of scientific institutions concerned with the social sciences. Within the 50 years of its existence the institute has developed into a major centre of

research into political economy which is an integral part of Marxism-Leninism.

The path traversed by the Institute spans a significant part of the history of Soviet economics. Scholarly works by the Institute's staff initiated a number of cardinal avenues in the advance of fundamental and applied research and did much to promote economic education in the country. The presentation of the Order of the Red Banner of Labour to the institute is evidence of the acknowledgement of the services it has rendered to the country.

The work of an economist in the USSR is both honourable and responsible, stressed the speaker. Its importance is sharply increasing under present-day conditions. Life itself, the specific features marking this stage of intensive development of social production, crucially require "thrifty economy" and make special demands upon economics. The Institute of Economics takes credit for quite a number of achievements in the elaboration of many scientific problems. However, against the background of the great demands posed by the practice of the building of communism its work does not yet fully meet the increased



needs of the day. As Leonid Brezhnev pointed out at the last Party Congress, a good many problems awaiting solution have piled up in socialist political economy.

We hope, said M. Zimyanin, that the highly competent associates of the Institute of Economics will spare no effort and put to work their knowledge and experience to resolve the problems arising in the course of social development and will approach their scientific, ideological and political tasks with a high sense of responsibility.

Soviet economics should be more active in further elaborating the theory of developed socialism, and in charting the ways of building the material and technical base of communism, and the development and improvement of the system of production relations. Of crucial importance today is the socio-economic problems of the scientific and technological revolution and of the effective use of the latest achievements of science and technology in the national economy.

The guidance of social development, the speaker stressed, requires a careful prognostication of social, economic, scientific and technological progress. This, in turn, necessitates an intensified cooperation between the social, natural and technical sciences. Questions pertaining to the enhancement of the effectiveness of social production, and overcoming serious drawbacks in this matter, the more rational utilisation of the country's tremendous economic, scientific and technical potentials and the thrifty and efficient use of the national economic resources are now

being accorded precedence. We must clearly realise that our successes in the building of communism, the country's defences and the strength of our positions in the struggle for peace and social progress directly depend on the results of our activities in all those areas.

The speaker then dwelt on the tasks confronting economists in optimising the location and employment of productive forces and in drawing up comprehensive programmes for the development of the country's large areas: the non-black-earth zone, the North, Siberia and the Far East, including the zone along the Baikal-Amur Mainline. The speaker further pointed to the importance of resolving the economic problems connected with the leading industrial sectors and stressed the necessity of advancing both the agrarian theory and economic management. The present situation requires that the efforts of science should be focused not only on elaborating theoretical questions but also on accomplishing key national economic tasks and on introducing revolutionary changes in the sphere of production.

In conclusion M. Zimyanin emphasised the growing role of economics in the ideological work, in exposing bourgeois and reformist doctrines, and in advancing the study of economics in the country.

Corresponding Member of the USSR Academy of Sciences E. Kapustin, Director of the Institute, Vice-President of the USSR Academy of Sciences Academician P. Fedoseyev and others congratulated the institute's staff on receiving the high award.

#### THE 26th CPSU CONGRESS AND LAW-GOVERNED DEVELOPMENT PATTERNS OF MATURE SOCIALISM

A scientific conference "The 26th CPSU Congress and Law-Governed Patterns of the Social Development of Mature Socialism" sponsored by the Department of Philosophy and Law of the USSR Academy of Sciences was held in Moscow in April 1981.

In his opening speech Vice-President of the USSR Academy of Sciences P. Fedoseyev pointed out the programmatic significance of the 26th CPSU Congress documents for the social sciences. Today, he underscored, it is important to ensure that scientific research should more effectively facilitate the solution of current economic, social and ideological problems. Research should also be conducive to the triumph of the ideas of scientific communism in the ideological struggle between the two systems, to promoting lasting peace on earth.

In his report "The Creative Contribution of the 26th CPSU Congress to the Development of the Theory and Practice of Scientific Communism" Academician A. Egorov pointed out that in elaborating its policy the Communist Party attaches paramount significance to ideological and theoretical work. Leonid Brezhnev in his report to the 26th CPSU

Congress creatively applied Marxist-Leninist methodological principles to the analysis of contemporary phenomena. These principles are:

First, a consistently implemented historicism, allowing for both understanding the past and correctly mapping out the further progress of the Soviet Union, determining the leading tendencies of social development as a whole.

Second, the principle of continuity without which the advance of society of developed socialism is impossible, i.e., the continuity of the objectives, means and methods enriched and concretised to fit the new conditions, requirements and possibilities of social development applied to solving political, economic, social, and all other problems.

Third, the system principle on whose foundation the scientific conception of the material and technical basis of communism, the economic and political conception of planning and management of social processes develop from congress to congress.

Fourth, solution of all concrete questions is determined by the overall aim, which is an important principle of the Marxist-Leninist methodology in dealing with the problems of socialist society.

Academician Egorov dwelt in detail upon non-antagonistic contradictions of mature socialist society. He said that a concrete historical approach is necessary for resolving these contradictions.

The problems associated with the law-governed development patterns of socialist society were extensively discussed at the conference. Yu. Pletnikov underlined that the specifics of the law-governed development patterns of socialist society is conditioned, first and foremost, by the fact that the spontaneous in the historical process gives its place, once a leading one, to the systematic or planned, which presupposes the presence of distinct ties between activity and the results obtained. Conformity to plan is a law of the development of the communist socio-economic formation which now manifests itself at the stage of mature socialism in that it creates the basis for planning the development of all spheres of life. Thus, under socialism the subjective factor acquires a new meaning. The mechanism of using social laws must be identical to that of their action, although such identity does not always take place.

Corresponding Member of the USSR Academy of Sciences E. Kapustin analysed problems associated with the economic development of mature socialism. He spoke about the task set forth by the 26th CPSU Congress to upgrade the economic mechanism thus ensuring a better fusion of the personal interests of each worker with the interests of the collective and society as a whole. The present-day situation makes the problem of the subjective factor in production, of the basic productive force, i.e., the worker himself and particularly his attitude to work, very acute. A major law-

governed pattern of developed socialism is the acceleration and intensification of the further socialisation of production in which the law of the correspondence of the relations of production to the nature of the forces of production manifests itself.

Democratisation of management, the broader participation of the working masses in running social production, is a major law-governed pattern of the stage of developed socialism. Corresponding Member of the USSR Academy of Sciences V. Kudryavtsev underlined that in his report, stressing the importance of the further consolidation of the legal basis of state life. Imbuing in each worker the understanding of his being the master of social production not only at his own work place but also *in general* helps him take an active part in running society.

Problems of the socio-class structure of the Soviet society were dealt with by Corresponding Member of the USSR Academy of Sciences M. Rutkevich. Organic integrity and dynamism are characteristic features of socio-class relations under mature socialism. The dynamism of socio-class relations under developed socialism is manifesting itself in the rapid elimination of the remaining social differences on the basis of a general upswing of culture, technology and working people's standard of living.

The role of the Party, its social policy in taking into account the interests of each social group, which timely reveals and solves non-antagonistic contradictions, is being enhanced. The theoretical conclusion drawn by the 26th CPSU Congress that the formation of a classless structure of society will occur for the most part within the historical

boundaries of mature socialism is becoming particularly topical.

Corresponding Members of the USSR Academy of Sciences T. Ryabushkin and B. Lomov spoke about the moulding of the new man—one of the major tasks set forth at the 25th and further developed at the 26th CPSU Congress. The Marxist-Leninist interpretation of society and the individual proceeds from the fact that a very complicated system of social relations determines the formation of particular groups and the social behaviour of individual members of society. The involvement of the individual in actual communities predetermines first and foremost the specific features of man's social being. A number of large-scale studies convincingly show that the socialist mode of life is being continuously upgraded. The way of life inherent

in a given society manifests itself through a multitude of particular variants which, in turn, essentially depend upon the degree of involvement of a concrete individual in the system of social relations, upon the nature of his activity.

Socialist culture plays a prominent role in the allround and harmonious development of the individual. Problems of spiritual development of Soviet society and cultural issues were examined by Corresponding Member of the USSR Academy of Sciences M. Iovchuk. Raising the level of culture and education changes the character of labour and is very conducive to eliminating the distinctions between manual and mental labour, between town and countryside. The political and moral culture of the people is becoming increasingly important.

I. Smirnov

## CONGRESS OF ECONOMISTS IN HAVANA

The Second Congress of the Association of Third World Economists has been held in Havana to discuss ways of overcoming the adverse consequences of the world economic crisis of the capitalist system, and of eliminating the backwardness inherited from the colonial past. Attending the forum were more than 600 representatives from the Asian, African and Latin American countries. Scholars from other countries were present as observers, including a Soviet delegation headed by Academician E. Primakov.

Fidel Castro, the leader of the non-alignment movement, addressed the Congress with a detailed account of the situation in the advanced capitalist and developing countries and an analysis of the causes of the

deep economic crisis experienced by the world capitalist system today.

The Cuban leader pointed out that official Washington continued its policy of diktat and pressure as big transnationals like it. Of late, he said, there has been much talk about the so-called North-South dialogue. This is being done in order to consign the past to oblivion, to distort the present and to draw a rose-coloured picture of the future. These theoreticians are trying to transpose the notion "North" to the developed socialist nations which, as it is known, have nothing in common with the colonialist and neo-colonialist policy of imperialism.

The transnationals, it was underscored at the Congress, draw fabulous profits in Asia and Latin Ameri-

ca. During the 1970-1978 alone they netted 2.4 dollars (and US monopolies—4.5 dollars) per each invested dollar.

A vital issue today is the unity of all newly free countries. A new and just international economic order based on the principles of equality will facilitate the economic and social development of the young states.

Spokesmen from developing nations voiced a demand to promote equal trade and abolish protectionism as well as to eliminate the inflation these nations are being saddled with; he also demanded that the plunder of the seas be stopped and the unrestrained arms race expenses reduced.

Four working committees were formed: "The International Economic Crisis and the Third World"; "International Strategies for Development, Negotiations and the New International Economic Order"; "National Strategy for Development. Theory and Practice of the Policy of Collective and National Self-Reliance. Independence of Third World Countries"; "Organisation, Rules and a Working Programme of the Association of Third World Economists". In addition, seven "round-table" sessions were organised to discuss international trade, structural changes in the world economy, currency, energy and other problems.

Soviet representatives addressed the working committees with the following reports: "The CMEA Countries and the New International Economic Order" (O. Bogomolov, Corresponding Member of the USSR Academy of Sciences), "The Cyclic Crisis and Inflation in the Capitalist States and Economic Prospects for the Developing Countries" (S. Menchikov) and "The Structural Crisis

and the Developing Nations" (G. Shirokov).

The Congress approved a statement underscoring that today, when imperialists are becoming more aggressive, the economists in the developing countries bear a greater responsibility for defending the interests of workers, peasants, and the oppressed all over the world.

The document flatly rejects the bourgeois formulas for overcoming backwardness which actually amount to the subjugation of the developing nations' national economy to the diktat of the transnationals and the concentration of capital in the hands of privileged groups. The International Bank for Reconstruction and Development and the International Monetary Fund, the bodies which impose these formulas, are becoming the gendarmes in the countries which they offer their services to. If the struggle against imperialism is to be a success, the document says, far-reaching transformations should be carried out and broad masses of working people in the developing countries should participate in economic management. The statement also indicates the need for intensified efforts to curb the arms race, consolidate peace, and expand international cooperation.

The Congress participants voiced their solidarity with the Cuban revolution, the peoples of Nicaragua, Grenada, El Salvador, and condemned the US imperialist policy in Latin America and the Caribbean.

A new Executive Council of the Association of Third World Economists has been elected. The eminent Cuban economist Oscar Pino Santos has been reelected Chairman of the Association.

**I. Kuznetsky**

## INTERCONGRESS OF ANTHROPOLOGISTS AND ETHNOLOGISTS

The First Intercongress of the International Union of Anthropological and Ethnological Sciences (IUAES) was held last April in Amsterdam in pursuance of the decision of the IUAES Executive Committee to convene such meetings in the period between congresses. Their purpose is to keep scholars abreast of research into little-studied anthropological and ethnological problems. The Amsterdam meeting was attended by more than 400 scholars from socialist, developing and capitalist countries. The Soviet delegation was headed by Academician Yu. Bromley, Vice-President of the IUAES Executive Committee.

The Intercongress covered wide range of anthropological and ethnographical problems: Marxism in anthropology, the future of anthropology, anthropology and health prophylaxis, visual anthropology, evolution of the political organisation, the future of structuralism, planned and spontaneous changes in the contemporary nomad and settled societies, among others.

Theoretical and methodological problems of ethnology were discussed at the symposium "Social Anthropology of Europe". Soviet scholars submitted the following reports: "Ethnographic Studies of Modern Life in the USSR" by Yu. Bromley, "Ethnodemographic Studies in the Contemporary World" by S. Brook, "Cultural Progress and Ethnic Self-Awareness (on the Basis of Ethnosociological Research Among the Peoples of the USSR)" by L. Drobizheva. The Soviet delegates took an active part in the discussion of other reports, including "Ethnic Processes in Socialist Romania" by J. W. Cole (USA), "Ethnicity and the Nation" by E. Wiegandt (Switzer-

land), "The Rise of National and Regional Self-Awareness. Problems and Methods of Investigation in Polish Ethnographic Studies" by B. Kopczyńska-Jaworska.

The symposium on "Anthropology of Education" heard the following reports: "Ethnic Hegemony—Ethnic Harmony? The Pluralist Dilemma in Education—the Case of Fiji" by B. Bullivant (Australia), "The Role of Anthropologists in the Implementation of the Functional Educational Project" by J. Ooijens (Netherlands). In her report "Education as a Factor of Contemporary Ethnic Processes", N. Bromley (USSR) proceeded from the scientifically substantiated premise that the Soviet people represent a new historical, social and international community of people with a common territory, unified economy, common socialist culture, federal state of the whole people, and a common goal—the building of communism. The report emphasised that this community has emerged for the first time in history as a result of the socialist transformations based on the drawing closer together of all social groups, and the constitutional and factual equality of all Soviet nations and nationalities. The report also examined the role of education in the Union republics of the USSR.

The reports at the "Anthropology and Religion" symposium dealt with the theme "Pluralism in Religions". Some of them disclosed the inconsistent and heterogeneous character of religious beliefs in one and the same society. Most interesting in this respect were the following reports, among others: "Pluralism and Problems of Belief" by M. Bourdillon (Zimbabwe), "Religious Pluralism among the Djuka: Its Social Forms" by W. van Wetering (Netherlands).

M. Aronoff (USA) in his report "Civil Religion in Israel" characterised the nationalist ideology of a considerable part of the Israeli population; in the opinion of the Soviet participants, he identified this ideology with religion. V. Basilov (USSR) delivered a report "The Main Results of the Studies of Central Asian Shamanism".

The "Multivariate Statistical Methods in Physical Anthropology" symposium discussed application of these methods to the problems of man's evolution, in determining the biological, in particular, genetic, distance between populations.

Various aspects of the food-production systems within the traditional economy of Africa were the subject of reports at the symposium "History and Prehistory of Africa". Some dealt with the social differentiation caused by the division of labour in mixed crop and cattle-breeding economies. N. Girenko (USSR) in his report "The Correlation of the Economic and the Social in the Evolution of the Primary Formation" called for a historical, diachronous approach to phenomena of socio-economic life.

The 1956 UNESCO decision on international research of, and assistance to, populations whose culture and language face substantial transformation or complete disappearance, was the starting point for the work of the symposium "Urgent Anthropology". Many of the reports dealt with the legal aspects of defending the rights of aborigines. Others called for optimal conditions to assure the survival and preservation of the traditional culture of ethnic groups in South America, Indonesia, Australia, India and Africa. H. Fahim (Egypt), A. Pollak-Eltz (Venezuela), L. Schomerus-Gernböck

(FRG) and others cited facts about the plight of aborigine populations of many countries, the result of urbanisation, epidemics, unlawful actions by governments and local chiefs, and disintegration of traditional cultures. Some European scholars see a solution in halting the process of cultural change in the developing countries and preserving existing cultural patterns. This view was reflected in the report by G. Kubik (Austria). Soviet researchers opposed that, arguing that to ensure progress in the developing countries, it is necessary not only to preserve traditional culture, but to ensure these peoples access to world culture.

The problem of preserving and recording elements of ancient Russian culture (epos, language phenomena, customs and rites), which were brought to the Far North in the 16th century by the early Russian settlers was discussed in the report by L. Kuzmina (USSR). A first step would be the study of the ethnic situation in which they had found themselves and the process of reciprocal influence of the Russian and the indigenous population. Speakers emphasised that the fate of a small ethnic group of a large people (Russkoye Ustye), which had assimilated age-old economic experience of the native population but had retained its spiritual culture was a very interesting phenomenon requiring comprehensive study.

S. Arutyunov (USSR), in his report at the "Food and Nutrition" symposium, summed up the discussion on the theme "Changes in Diet", and initiated the "Preservation of Food" discussion.

Several problems were examined by the IUAES Problem Commissions. Soviet members of the "Future

of Anthropology" commission proposed concentrating on working out the main criteria of the subject of anthropology (ethnography) among other related disciplines, and on research in present-day global problems.

## AN ALL-UNION CONFERENCE OF PHILOSOPHERS

In April 1981, the Third All-Union Conference on the Philosophical Problems of Modern Natural Science was held in Moscow. It reviewed the work of philosophers in this field in the past decade and defined new problems and directions of research, proceeding from the decisions of the 26th Congress of the CPSU and the needs of the development of modern science.

More than 800 philosophers and natural scientists took part in this conference convened at the initiative of the Scientific Council on the Philosophical and Social Problems of Science and Technology under Presidium, of the USSR Academy of Sciences. They represented all the leading scientific institutions of Moscow and Leningrad and of the Union republics. Thirty-three reports were made on three main topics: "Evolution of Matter and Its Structural Levels", "The Unity and Diversity of the World; Processes of Differentiation and Integration of Knowledge", "Man, Society, and Nature in the Age of the Scientific and Technological Revolution". Besides, the programme of the conference included three evening discussions: on the problems of global evolutionism, on the dialectics of scientific revolutions, and "V. I. Vernadsky and Modern Science". Eleven papers were read at these discussions.

The conference was opened by Academician Anatoli Alexandrov,

The IUAES Executive Committee decided to hold the next, 11th, Congress on the theme "Anthropology and Society" in Quebec and Vancouver, Canada, in August 1983.

L. Kuzmina

President of the USSR Academy of Sciences.

Vice-President of the USSR Academy of Sciences, Academician Pyotr Fedoseyev, made the report "V. I. Lenin and the Philosophical Problems of Modern Natural Science: Results and Perspectives".

(The speeches by Alexandrov and Fedoseyev are available to the reader in the form of articles based on these speeches and published in this issue.)

The speakers at the conference pointed out that the idea of a union between philosophy and natural science is becoming ever more vitally important and is as strikingly profound as ever. Given the present-day rapid development of many scientific trends, it is impossible to interpret and generalise the causes for the variety of the manifestation of matter without a philosophical approach.

The fundamental nature of problems included in the programme of the conference, distinguishes it from the previous two conferences. The latter were mostly concerned with the philosophical problems of separate natural sciences, primarily of physics and biology, while the present conference was aimed at the analysis of fundamental problems common to all the branches of scientific knowledge.

The orientation of the Third Conference at problems of interdisciplinary nature did not of course rule out philosophical and methodologi-

cal analysis of separate disciplines. A number of new problems were raised during the debate that are integrative in character, referring to the whole of science. These include the following:

1. The links between science, technology, and production. This problem was discussed on the socio-philosophical plane in the reports by Academicians B. Paton ("Science, Technology, and Production"), A. Prokhorov ("Fundamental Research and Technological Progress"), N. Basov ("Quantum Electronics and Philosophy") and in other speeches.

2. Problems in the interaction between the social, natural, and technical sciences, the dialectics of the processes of differentiation and integration of scientific knowledge. Reports on these problems were made by Academicians B. Kedrov ("On the Modern Classification of Sciences"), M. Markov ("On the Unity and Diversity of the Forms of Matter in the Physical Picture of the World"), N. Emanuel ("The Problem of Differentiation and Integration in Chemistry with Reference to the Development of the Theory of Chemical Processes"), Corresponding Member of the USSR AS S. Mikulinsky ("The Present-Day State and the Theoretical Problems of the Development of Science"), and also by A. Ursul ("Interaction between the Natural, Social, and Technical Sciences"), V. Gott ("Material Unity of the World and the Unity of Scientific Knowledge"), Yu. Sachkov ("The Style of Thinking and Research Methods").

3. Problems in the unity and diversity of matter, its evolution and structural levels. These were discussed in the reports by Academician V. Ambartsumyan and V. Kazyutinsky ("The Dialectics of the Cognition of the Evolutionary Processes

in the Universe"), Academician A. Logunov ("New Conceptions of Space-Time and Gravitation"), Academician V. Ginzburg ("Notes on the Methodology and Development of Physics and Astrophysics"), Academician Yu. Ovchinnikov ("The Era of Physico-Chemical Biology and the Materialist Worldview"), Academician M. Gilyarov ("Some Methodological Problems in the Theory of Evolution in Biology"), Academician A. Yanshin ("The Principles of the Study of Geological Evolution"), by Yu. Zhdanov, Corresponding Member of the USSR Academy of Sciences ("Materialist Dialectics and the Problems of Chemical Evolution"), by V. Davydov, Member of the USSR Academy of Pedagogical Sciences, and V. Zinchenko, Corresponding Member of the USSR Academy of Pedagogical Sciences ("The Principle of Development in Psychology").

4. The problems of the essence of the social consequences of the scientific and technological revolution and its links with man. Particular attention was attracted by reports concerning the unity of and interaction between the social and biological factors in the development of man. The reports were delivered by Academicians D. Belyaev ("Modern Science and the Problems of the Study of Man"), N. Dubinin ("The Dialectics of Leaps in the History of Life"), A. Bayev ("Modern Biology as a Social Phenomenon"). The socio-ethical and humanistic aspects of modern science and technology were analysed in reports by Academician V. Engelgardt ("The Science-Technology-Humanism Triad and the Relations Between Its Elements"), by I. Frolov, Corresponding Member of the USSR Academy of Sciences ("The Socio-Ethical and Humanistic Problems of

Modern Science"). The study of the problem of man in the light of modern scientific cognition was the subject of reports by N. Bochkov, Member of the USSR Academy of Medical Sciences ("The Methodological and Social Problems of the Genetics of Man") and B. Lomov, Corresponding Member of the USSR Academy of Sciences ("The Scientific and Technological Revolution and Some Principles of Psychology").

5. The problems of interaction of society and nature, the socio-philosophical problems of the biosphere, the global problems of modern times. This range of topics was covered in the reports by Academician A. Sidorenko ("The Socio-Philosophical Problems of the Biosphere"), and the speeches of V. Zagladin, N. Moiseyev, Corresponding Member of the USSR Academy of Sciences, and others.

The range of problems discussed at the Third All-Union Conference thus shows that it has substantially extended the framework of the analysis of philosophical problems of modern natural science. It was actu-

ally devoted to the study of urgent philosophical and social problems of interaction between the social, natural, and technical sciences. This all-round approach signifies a new direction, determining the programme of further studies conducted in the USSR in this field; this was emphasised in the closing speech by P. Fedoseyev at the end of the conference.

The Third All-Union Conference on the Philosophical Problems of Modern Natural Science, where the decisions of the 26th Congress of the CPSU figured prominently, inspired great interest among philosophers and natural scientists of different specialities and of the broad scientific circles. It showed that at present scientists from many scientific centres of the country begin to take part in working out the philosophical and social problems of the scientific and technological revolution, and that the social and practical significance of these studies has grown essentially.

V. Ignatyev

## CONFERENCE OF SOVIET LATIN-AMERICANISTS

"The Present Stage of the Liberation Movement in Latin America and the Tasks of Soviet Latin-Americanists" was the subject of an All-Union conference held in Moscow in March 1981. It was sponsored by the Institute of Latin America of the USSR Academy of Sciences jointly with the Soviet Association of Friendship and Cultural Relations with Countries of Latin America.

The plenary meeting was addressed by the Director of the Institute, V. Volsky, and by foreign guests to the 26th CPSU Congress from Latin America and the Caribbean.

Volsky noted that in the present conditions, when capitalism in most of the continent's countries has reached relative maturity, the effect of the general crisis of capitalism in them has changed substantially: whereas formerly the aggravation of the crisis in imperialism's centres facilitated the development of local capital in the less developed countries now, with the ever expanding penetration of the transnationals into the economy of the region, the crisis repercussion has become practically synchronous and identical. The reserves of progressive capitalist de-

velopment which would provide certain possibilities for fighting for genuine independence, including economic, are small and depend upon factors operating in individual countries. In describing the present stage of the liberation movement in the region, the reporter underlined that it was characterised by the development and merging of the two streams of the struggle—against foreign imperialism and against local reaction. The class struggle of the proletariat, the peasant actions and general democratic struggle against fascism and the oligarchy are assuming ever greater importance. The acuteness of the crisis of dependent capitalist development, as also the alternatives of a way out of the crisis, differ in the different countries of the continent.

Touching upon the tasks the 26th CPSU Congress set before Soviet scientists, Volsky stressed the need for in-depth regional and comparative typological investigations of the specific features of internal socio-economic and class structures, for studying the specifics of the mechanism of transnationals' domination and of imperialist control of the countries of the continent, and the subjective factors of development of the liberation struggle.

The foreign guests who took the floor underlined the world historic significance of the 26th CPSU Congress whose decisions will help to strengthen peace and further human progress. They gave a detailed analysis of the political situation in the continent, of its uneven economic development and called for a more comprehensive study of the peculiarities of development in each individual country. They also pointed to the necessity of uniting all strata suffering from imperialist and

monopoly rule, all revolutionary forces.

Two sections worked at the conference. One discussed political and ideological problems of the liberation anti-imperialist movement and the tasks of Soviet Latin-Americanists. In his report A. Shulgovsky noted the sharpening of the ideological struggle between the supporters of a revolutionary and democratic alternative and those of a counter-revolutionary, reactionary alternative. He spoke of the decay of the right-authoritarian ideology, of its spiritual paucity, of the manoeuvring of the reactionary ideologues in their search for new methods of fighting the progressive forces. The reporter also noted the growing influence of the ideas of Marxism-Leninism, the major contribution by Communists to the elaboration of the theoretical and ideological aspects of the democratic alternative.

B. Merin dwelt at length on the qualitative and quantitative changes in the Latin American working class, the expanding social frontiers and complication of its structure, on the growing influence of the working class on the entire course of social development. He underscored that working-class unity was one of the main conditions ensuring success of the anti-imperialist movement and class struggle in Latin America.

The section also heard reports by V. Tsaregorodtsev on the prospects of unity of the continent's revolutionary forces; by A. Glinkin who gave a detailed analysis of Latin America's international relations and foreign policy and stressed the need for special studies of the many new trends in this policy; by Yu. Zubritsky on the movements of the continent's Indians, and by several other reporters.

The second section discussed the study of the continent's struggle for economic independence. L. Klochkovsky noted in his report that the intensification of the struggle is determined by objective factors and, in the first place, by the operation of the laws of development of dependent capitalism. The tendency towards pursuing an independent foreign policy, towards restricting imperialist exploitation is gaining ground. The neocolonialist manoeuvres of the imperialist powers who are trying to strengthen their ties with the ruling oligarchies are a serious danger. The exacerbation of social antagonisms, the reporter noted, brings closer together the tasks of the anti-imperialist movement and of the struggle for social emancipation.

I. Sheremetyev showed the role of the state sector as one of the major forms of the struggle of peoples for

economic independence and social progress, and the new tendencies in its development. This sector is the object of a sharp ideological and socio-political struggle. The reporter also dwelt on the specific features of the state sector in various "models" of socio-economic development.

Among the issues discussed at this section were the struggle against technological neocolonialism (Yu. Grigoryan), the state-monopoly mechanism of contemporary neocolonialism (M. Serebrovskaya).

All the speakers in the discussion underlined the importance of the research work of the Institute of Latin America as a leading centre of Latin American studies and noted that the conclusions of Soviet scholars coincide in many instances with those of the progressive scholars and public figures of Latin America.

**Z. Ivanovsky**

## AN ALL-UNION ARCHAEOLOGICAL CONFERENCE

New archaeological discoveries were the subject of an archaeological conference held in Tbilisi, the capital of the Georgian SSR, last April, to mark the centenary of the Fifth All-Russia Archaeological Congress, which initiated the systematic study of the history and culture of the Transcaucasian peoples. The conference brought together scholars from more than 50 scientific institutions.

Papers were read in the five sections: Archaeology of the Stone Age; the Eneolithic and the Bronze Age; the Late Bronze Age and the Early Iron Age; Antiquity; Mediaeval Archaeology in the USSR. There were also visits to digging sites.

Academician B. Piotrovsky (Leningrad) spoke on early collections of Transcaucasian archaeological mater-

ials. These included Armenian antiquities, mainly inscriptions, objects identified as Urartian, and objects dating to the Antiquity. In 1871, an ancient burial ground was discovered near Mtskheta, the collected material was compared with the similar West European material. About the same time, the Caucasian Archaeological Committee was founded, subsequently reorganised into the Society for the Study of Caucasian Archaeology.

The Fifth All-Russia Archaeological Congress held in 1881 in Tiflis (now Tbilisi) stimulated the development of archaeology in the Caucasus. The Preparatory Committee had collected data on Caucasian archaeological monuments. The congress established contacts between

local scientific institutions and the Moscow Archaeological Society, which in 1888 began publication of *Archaeological Materials of the Caucasus*. Another organisation, the Russian Imperial Archaeological Commission, started work in the Caucasus in 1891. A new stage was reached in the 1920s, after the end of the Civil War. Scientific institutions were set up in the Soviet Transcaucasian Republics and planned research began into the ancient history of the region.

The report by T. Mikeladze and T. Beriashvili (Tbilisi) on the 1881 Congress aroused much interest. They described the enthusiastic response of progressive Georgia to its initiative in starting a scientific study of the history and culture of the Caucasian peoples.

Three reports dealt with the achievements of archaeology in the Transcaucasus. O. Lordkipanidze (Tbilisi) gave an account of what Georgian archaeologists had accomplished both in the field research and in solving fundamental archaeological problems. Monuments dating back to all historical periods, from the middle stage of the Acheulian Epoch, when the settlement of the Caucasus began, have been discovered in the republic. Especially well studied are Neolithic monuments of the epoch of the emergence of a producing economy, and those of the Bronze Age. The study of antique and mediaeval monuments yielded important results. The recently adopted law "On the Protection and Use of Historical and Cultural Monuments" and special decisions of the Georgian Communist Party and the Georgian Government on the further development of archaeology open wide perspectives for research.

I. Aliyev and G. Akhmerov (Baku)

described research in Soviet Azerbaijan. Monuments dating to all historical epochs, from the early Stone Age to the later Middle Ages have been discovered in various parts of the republic.

B. Arakelyan (Erevan) reported on archaeological research conducted in Armenia, especially the study of Palaeolithic caves in the Razdan Gorge, and Neolithic settlements. He also gave a survey of Armenian monuments from the 6th century B.C. to the 4th century A.D.

O. Japaridze (Tbilisi) delivered a report, based on ancient written sources, on the great contribution of the Caucasian peoples to the development of metallurgy. He cited ancient sources and dwelt in detail on the diggings in Trialeti, southern Georgia, where a number of important discoveries provide evidence that the Late Bronze Age in the Transcaucasus was preceded by highly developed Kura-Araks and Trialeti cultures. Thus the beginning of the Middle Bronze Age can be dated to the second half of the 3rd millennium B.C., while its zenith can be dated to the first half of the 2nd millennium B.C.

A number of reports took up individual archaeological problems. The conference showed especial interest in the report of Academician B. Rybakov (Moscow), "Lada (the Cult of a Springtime Agricultural Deity)". Slavonic and Lithuanian ethnographic records of the 16th-19th centuries, the reporter said, feature broadly the cult of the agricultural deities Lada and Lelya. This was connected with the springtime cycle of rites and songs as well as with the marriage rite. Fifteenth-century Polish documents suggest that the cult was still in existence after the adoption of Christianity. The Lada cult is

supposed to be a very ancient one, migrating from south to north together with Neolithic agricultural colonisation. Russian embroideries retained the image of Lada—Spring riding "a golden plough".

N. Merpert (Moscow) described some interesting discoveries in his report, "Problems of the Cultural and Historical Development of South-Eastern Europe in the Transitional Period from the Eneolithic to the Early Bronze Age". His main idea was that the Balkans and the Danubian region, due to their geographic location and natural conditions, were the main link connecting Near East cultural centres and Europe, and thus exerted a considerable influence on Europe's cultural development.

The report of I. Shurgaya (Leningrad) was titled "Ilurat. Results of Archaeological Investigations". It surveyed the findings of many years of digging in the Bosporan city, so that now we have a clear picture of its planning, building techniques, fortifications, handicrafts and economy.

E. Alexeyeva, I. Kruglikova and A. Shavyrin (Moscow) delivered a report, "Twenty Years of the Anapa Expedition". They introduced the results of diggings of Gorgippiya, a town founded in the 5th century

B.C. The expedition studied residential quarters, dwellings, rural suburbs and necropolises.

V. Yanin, Corresponding Member of the USSR Academy of Sciences, and B. Kolchin (Moscow) reported on the Novgorod diggings started back in 1932. The work there has gone through three stages: from 1932 to 1948 the diggings were of an exploratory character. The second, stationary, stage began in 1951, when the work was shifted to residential quarters, and the first birch-bark scrolls were found. Since 1967 the expedition has been working in areas where construction work is under way, and the archaeologists are studying the cultural layer.

N. Gurina (Leningrad), in her report "Popular Images in the Pictorial Art of Ancient Forest Tribes", spoke of the results of lengthy investigations of primitive art monuments. G. Korobkova (Leningrad) in her report, "The Common and the Specific in the Economies of Early Agricultural and Cattle-Breeding Societies in the South of the USSR", analysed early economic complexes in Central Asia, the Caucasus and North-West Black Sea Coast and draw a number of interesting conclusions about the development of the producing economy.

K. Smirnov

## CHRONICLE

\* An enlarged session of the Social Sciences Section of the USSR Academy of Sciences' Presidium in Moscow was attended by heads of national academic, research and educational institutions. They discussed the tasks facing social scientists in the light of

This review covers the events of February-April 1981.

decisions adopted at the 26th CPSU Congress.

The keynote report was delivered by Academician P. Fedoseyev, Vice-President of the USSR AS. Participants spoke of the growing role of the social sciences in communist construction and approved a resolution to intensify research, increase its efficiency and strengthen ties between

science and practice. Taking part in the session was Corresponding Member of the USSR AS S. Trapeznikov, Head of the Department of the CC CPSU for Science and Educational Establishments.

\* A celebration meeting to mark the Day of Soviet Science was held on April 17, 1981, in Moscow. It was attended by Vice-Chairmen of the USSR Council of Ministers, heads of the Academies, ministries and departments, prominent scientists and public figures. The audience was addressed by Academician E. Velikhov, Vice-President of the USSR AS.

\* The 5th International Kant Congress in Mainz brought together philosophers from 53 countries. It was devoted to the 200th anniversary of Kant's masterpiece, *Critique of Pure Reason*.

The congress was opened by G. Funke, a West German scholar, President of the International Kant Society. Speakers at the plenary session included T. Oizerman, Corresponding Member of the USSR AS, who presented a paper "Kant and the Problem of Cognition Activity".

\* An international symposium "Hegel's Philosophy and Marxism-Leninism" was held in Berlin. It was sponsored by the Central Institute of Philosophy of the GDR AS and the Institute of Philosophy of the USSR AS.

V. Mshvenieradze of the USSR and M. Buhr of the GDR read survey papers "Hegel's Philosophy and Our Time" and "Five Remarks to the Theme: 150 Years After Hegel", respectively. Soviet scholars presented the following papers: "Dialectical Materialism and Hegel's Historico-Philosophical Doctrine" (T. Oizerman), "Hegel's Concept of Formal Logic and Dialectical Materialism"

(G. Brutyan), "The Problem of Man in Hegel's Philosophy and in Marxist Philosophy" (A. Myslivchenko) and "A Critique of the Latest Bourgeois Interpretations of Hegel's Philosophy" (R. Sokolova). German participants delivered papers "On Hegel's Speculative Physics" (H.-J. Treder), "Hegel-Feuerbach-Marx" (W. Schuffenhauer), "Hegel and Contemporary Scientific Theoretical Relativism" (D. Wittich) and "Positivist Criticism of Hegel" (J. Schreiter).

Participating in the work of the symposium were philosophers from Czechoslovakia, Hungary, the FRG, Mexico, the Netherlands, Poland, Portugal and West Berlin.

\* A scientific symposium "A Historico-Scientific Doctrine and Research in the Past, Present and Future" devoted to the 75th anniversary of the Karl Sudhoff Institute was held in Leipzig under the sponsorship of Karl Marx University. Scholars from all European socialist countries, the FRG, Japan, the United Kingdom and the USA attended. Corresponding Member of the USSR AS S. Mikulinsky, Director of the Institute of the History of Natural Science and Technology of the USSR AS, delivered a paper "On the Motive Forces of the Development of Science".

\* Problems of the economic, social and cultural development of the USSR and the USA in the 1920s and 1930s were discussed at the *Soviet-American colloquium of historians* in Princeton, New Jersey, organised by the American Historical Association (AHA).

The Soviet and American delegations were headed by S. Khromov, Director of the Institute of the History of the USSR, and M. Thompson, Executive Director of AHA, respectively.

Soviet scholars presented the following papers: the democratisation of culture in the USSR after the Great October Socialist Revolution of 1917 (M. Kim); changes in the structure of the Soviet population between the two world wars (Yu. Polyakov); the historical experience of the national economic planning in the USSR in the 1920s-1930s (S. Khromov); social aspects of Roosevelt's New Deal (V. Malkov); the cultural advance of the formerly backward peoples of the USSR (a study case of the development of mass education in the 1920s) (V. Kumanev); the public regulation of the US economy under the New Deal (N. Sivachev).

American historians presented papers on the use of US technology in the USSR, 1917 to 1941 (K. Bailes); on the American farmers' and workers' movement between the two world wars (D. Brody); on the ways of development of American culture between the two world wars (L. Veysey); on the regulation of the US economy under the New Deal (B. Karl); on the specific features of development of Soviet culture in the 1920s-1930s (R. Williams); on the planning targets in the USSR in the 1930s (H. Hunter).

In the discussion that followed Soviet scholars A. Chubaryan, V. Shishkin, A. Shlepakov, and American scholars A. Ascher, D. Koenker, M. Levin, J. T. Patterson, R. Stites, G. Fite and D. A. Hollinger took part.

\* Zvenigorod, near Moscow, was the venue of the *W. Barthold Readings* held in commemoration of Academician W. Barthold (1869-1930), a prominent Russian Orientalist. They were organised by the Institute of Oriental Studies of the USSR AS. The theme of the readings was

"Written Monuments of the History of the Middle and Near East (Source and Text Studies)". More than 60 papers were heard.

\* The Scientific Council of the USSR Academy of Sciences' Institute of the History of the USSR met in Moscow to mark Academician M. Nechkina's eightieth birthday and sixty years of her research and educational work. An address was read by Corresponding Member of the USSR AS P. Zhilin, Deputy Academic Secretary of the History Division of the USSR AS. Speeches of welcome were delivered, among others, by Academician I. Mints, Corresponding Member of the USSR AS Yu. Polyakov and S. Khromov, Director of the Institute of the History of the USSR.

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On the occasion of her jubilee, the USSR Supreme Soviet's Presidium awarded M. Nechkina the Order of Lenin. She is a holder of other two Orders of Lenin, one Order of the Red Banner of Labour and one Order of the Peoples' Friendship.

\* The *Volgin Prize of 1980* was awarded to S. Tokarev, D. Sc. (Hist.), of the Institute of Ethnography of the USSR AS, for his books *The Sources of Ethnography* (Moscow, 1978), and *A History of Ethnography Abroad* (Moscow, 1978). In these works the author defines the place of ethnographic studies in the system of historical sciences, traces the development of modern ethnography and shows how it has been influenced by the Marxist-Leninist science of society.

This prize, instituted in honour of Academician V. P. Volgin, a prominent Soviet historian, is awarded to Soviet scholars once in three years for the best historical studies.



\* Bad Ischl, Austria, hosted an *international seminar on economic relations between East and West*. The speakers included M. Maximova and A. Belchuk, both of the Institute of World Economy and International Relations of the USSR AS, who read papers "The USSR-West Relations in the 1980s—the Present-Day Problems of Economic Cooperation" and "The World Energy Situation and Economic Relations Between East and West", respectively.

\* Scholars from more than 25 countries, including Bulgaria, the GDR, Hungary and the USSR, took part in an *international scientific colloquium in Al Jazair, Algeria*. They discussed *methods of penetration of foreign capital into national economies and how it affects the restructuring of traditional Arab society and the formation of the working class there*.

Soviet scholars presented papers on the specific features of the formation of the working class in Arab countries (B. Seiranyan), on the specifics of the traditional social structure and of the formation of the working class in Tunisia (V. Maksimenko) and on Soviet studies of the formation of the working class in Arab countries (L. Moskvina).

\* A *Session of the Soviet-French Working Group for the Study of Economic Prospects* was held in Paris. The Soviet delegation composed of specialists from planning, financial and research institutes was headed by N. Lebedinsky, Deputy Chairman of the USSR State Planning Committee; the French delegation was led by P. Cortesse, Director of the Department of Forecasting, Ministry of Economy.

The French side reviewed the results of economic exchanges between France and the USSR since

1970 and their evolution in 1980. The Soviet delegation outlined the beneficial influence the compensatory agreements had exerted on Soviet-French economic relations.

The two sides agreed to continue the exchange of information on the economic development of their countries and to conduct bilateral studies of production projects with a view to opening up new vistas for Soviet-French economic cooperation.

\* The *13th Soviet-Japanese Symposium of Economists* was held in Moscow at the Institute of the World Economy and International Relations of the USSR AS. Three themes were on the agenda: "The World Economy", "Japan's Economy", "The USSR Economy". V. Martynov, Deputy Director of the Institute, made an introductory speech.

Soviet scholars read the following papers: "Slump in the Economy of Developed Capitalist Countries" (L. Grigoriev), "The State and the Economy in the 1970s" (V. Kusnetsov), "Some Specific Features of the Cyclic Movement of Prices in Conditions of Accelerating Inflation" (R. Entov), "The New Tendencies in Relations Between the States in Connection with the Development of the World Ocean" (Yu. Barsegov, L. Lyubimov), and "Urgent Problems of the Development of the Soviet Economy in 1981-1985" (V. Kashin).

Japanese economists presented the following papers: "Current Situation of International Economy and the Developed Capitalist Countries" (T. Kawata), "Changes in Industrial Structure of Japan: Present and Prospect" (T. Uchida), "Characteristics of Structure of Japanese Trade Unions: International Comparison" (Sh. Tokunaga), and "Some Requests for Availability of USSR Economic Statistics" (Y. Nomura).

\* Odessa played host to a *Soviet-Swedish symposium "The Economic Problems of the Scientific and Technological Progress"*. The Soviet delegation was headed by Academician T. Khachaturov, the Swedish, by Professor A. Iveroth.

Soviet scholars presented the following papers: "The Technology Change and the Problems of Investments" (V. Krasovsky), "Structural Changes in Industrial Production and Programmes of Technical Progress" (V. Altayev, A. Semyonov), "Complex Scientific-Technological Programmes in the USSR: Problems of Development and Management" (L. Evenko), and "The Use of Patent Statistics for Analysis of Technological Change" (E. Filippovsky).

Swedish speakers included K.-O. Faxen, G. du Riets, S. Viotti, H.-O. Hagen, I. Aaberg and V. Lars.

\* The *Executive Council of the World Federation of Scientific Workers*, at its meeting in Budapest, called on all scientists of the world to intensify their struggle to avert the danger of a nuclear war.

The Federation is a mass organisation embracing more than 400,000 scientists and scholars from different countries. The resolution adopted at the meeting welcomes Leonid Brezhnev's proposal, put forward at the 26th CPSU Congress, to set up a competent international committee of men of science which would demonstrate the vital necessity of preventing a nuclear catastrophe. The Federation considers it its prime task to set up such a committee.

The struggle to end the arms race is one of the main goals of the Federation, the resolution underlines. The spiralling armaments drive would lead to a sharp deterioration of international security and

increases dangers of a nuclear conflict.

The Federation stands for strengthening world peace, and denounces the use of scientific achievements for creating new weapons of mass destruction. It has strained every effort to warn public opinion about the growing dangers posed by the arms race. The Federation, the resolution points out, wants to acquaint mankind with the disastrous consequences of a nuclear war.

The Soviet delegation at the meeting was headed by Academician N. Basov.

\* An *International Symposium on Topical Problems of Security and Detente in Europe* was held in Moscow under the sponsorship of the Scientific Research Council on Peace and Disarmament and the Soviet Committee for European Security and Cooperation. The symposium was opened by the Committee's Chairman A. Shytikov, Chairman of the Soviet of the Union of the USSR Supreme Soviet.

The introductory paper was read by Academician N. Inozemtsev, the Scientific Council's Chairman, Director of the Institute of the World Economy and International Relations of the USSR AS. Special prominence was given to Leonid Brezhnev's constructive proposals put forward at the 26th CPSU Congress which were aimed at normalising the international situation and curbing the arms race.

The participants exchanged views on the present state and prospects of ensuring security in Europe, of measures to reduce military confrontation and of continuing a mutually advantageous European cooperation.

More than 100 prominent scholars, public and political figures from 23 countries, participants in the Con-

ference on European Security and Cooperation, attended the symposium.

\* Philadelphia (Penn.) was the venue of the *22nd Annual Convention of the International Studies Association (USA)*. The main theme of discussions was "Integration and Fragmentation in a Global System". Nearly 1,500 scholars engaged in international studies took part in the convention. Attending it, besides American researchers, were scholars from France, the FRG, the GDR, Norway, Poland, Rumania, Sweden, the United Kingdom, the USSR and other European countries.

The aggravation of Soviet-American relations caused by Washington's actions, the new Administration's advent to power, the fresh peaceful initiatives advanced by the 26th Congress of the CPSU all aroused a keen interest among the participants in the work of the section of American-Soviet relations. Yu. Davydov, V. Berezhkov and S. Rogov of the Institute of the US and Canadian Studies of the USSR AS delivered communications on each of the five points of the agenda: "American-Soviet Relations: What Do We Do Now?", "Soviet and American Perceptions of Detente", "The Future of SALT", "American-Soviet Relations and the Third World", and "Soviet-American Relations and Detente". Soviet speakers criticised certain American circles for their attempts to make the Soviet Union responsible for the difficulties the policy of detente is facing. They pointed out that the present tension was caused by the American ruling quarters seeking to change the established balance of forces in their favour and attain military superiority over the Soviet Union. They emphasised the Soviet Union's desire to

carry on a constructive dialogue with the United States on the basis of parity and equal security.

The results of the heated discussion that followed were summed up by Professor F. W. Neal, the American head of the section, who said that however complex the problems arising in Soviet-American relations might be, they require a continued dialogue rather than a resumed confrontation.

In the opinion of D. Kuhlman, the Association's Executive Director, the participation of Soviet scholars in the convention provided their Western colleagues with an opportunity to receive first-hand information on the Soviet stand, its logic and motives, and was a concrete contribution to the restoration of normal relations between the two countries.

\* An annual meeting of the *Scientific Research Council on Peace and Disarmament under the USSR Academy of Sciences, the USSR State Committee for Science and Technology, and the Soviet Peace Committee* was held in Moscow.

Academician N. Inozemtsev, Chairman of the Council and Director of the Institute of the World Economy and International Relations, presented a summary paper. Among the speakers were Academicians E. Fyodorov, E. Primakov, J. Gvishiani and M. Markov.

The participants reviewed Soviet studies of the problems of ensuring international security and curbing the arms race, and mapped out the main lines of the further elaboration of these urgent problems of today in the light of the decisions adopted at the 26th CPSU Congress.

\* The Diplomatic Academy of the Ministry for Foreign Affairs of the USSR sponsored a scientific conference "*Problems of Soviet Foreign Policy*

*and International Relations as Reflected in the Decisions of the 26th CPSU Congress, and the Ensuing Tasks Facing the Soviet Science of International Relations*".

The conference was opened by Corresponding Member of the USSR AS S. Tikhvinsky, Rector of the Academy. The main paper, "The Urgent Problems of Soviet Foreign Policy and International Relations in the Light of the Decisions Adopted at the 26th CPSU Congress", was read by V. Maltsev, First Deputy of the USSR Minister for Foreign Affairs.

The conference proceeded with its work in panels: "General Problems of the Present International Relations and the Foreign Policy of the USSR", "The USSR and the Socialist Countries", "The USSR and the Developing Countries", "The USSR and the Capitalist Countries", "Problems of the Present Ideological Struggle and a Critical Review of the Bourgeois and Revisionist Falsifications of the History of International Relations and Soviet Foreign Policy".

More than 80 papers were heard in the panels. Speakers included Academician A. Narochnitsky, Corresponding Members of the USSR AS S. Emelyanov and G. Kim, Director of the Institute of Africa An. Gromyko, leading Soviet experts on international affairs and the USSR Ministry for Foreign Affairs' executives.

\* A scientific session "*The Soviet Union in the Struggle for Peace and International Cooperation in the Light of the Decisions of the 26th CPSU Congress*" was held in the Moscow State Institute of International Relations of the USSR Ministry for Foreign Affairs. The opening address was made by G. Kornienko, First Deputy of the USSR Minister

for Foreign Affairs. The Institute's Rector, N. Lebedev, read a paper "The Soviet Peace Programme for the 1980s".

\* A scientific conference commemorating the death centenary of F. M. Dostoyevsky and devoted to the problems of his creative work was held in Moscow by the Gorky Institute of World Literature of the USSR AS. The following papers were presented: "The World Significance of F. M. Dostoyevsky" (G. Fridlender), "Dostoyevsky on the Destiny of European Civilisation" (V. Kirpotin), "Dostoyevsky as a Man of Letters" (Yu. Seleznev), "Dostoyevsky and Traditions of Russian Classical Realism" (V. Vetlovskaya), "Dostoyevsky About the Ways of the Development of Russian Literature" (V. Kozhinov), and "Dostoyevsky in Contemporary Western Philosophy" (Yu. Davydov).

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A *Dostoyevsky commemoration meeting* was organised by the Central Writers' Club in Moscow. It was opened by the playwright V. Rozov. An introductory paper—"Man in Dostoyevsky's Artistic World"—was delivered by L. Rozenblum. The speakers included P. Palievsky, Deputy Director of the Gorky Institute of World Literature, B. Bursov, D. Sc. (Philol.), and other workers of art and culture.

\* The 150th birth anniversary of the outstanding Russian writer N. S. Leskov was marked by a grand meeting in Moscow. It was opened by F. Kuznetsov, Secretary of the USSR Writers' Union, Chairman of the National Jubilee Committee. "A Word About Nikolai Leskov" was delivered by V. Dementiev, Secretary of the RSFSR Writers' Union.

Leskov, an original author with a profound knowledge of contemporary Russian life, wrote many pages inspired with love for man. Speakers at the meeting underscored that he rightfully belongs to the top echelon of the masters of Russian culture.

Attending the meeting was P. Demichev, USSR Minister of Culture, Alternate Member of the Political Bureau of the CC CPSU.

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An *All-Union scientific conference devoted to this event* was sponsored by the USSR Writers' Union, the Gorky Institute of World Literature and the Institute of Russian Literature (the Pushkin House) of the USSR AS.

The following papers were read: "Specific Features of Poetics of Leskov's Art" (D. Likhachev), "Leskov's Artistic Discoveries" (N. Fed), "Leskov and the Development of Russian Realism" (V. Bogdanov), "Russian Classical Writers in Leskov's Evaluation" (K. Lomunov), "Leskov, the Journalist" (A. Gorelov), "Leskov's Art and Traditions of Russian Romanticism" (V. Troitsky), "Artistic Traditions of Leskov and Gorky's Creative World" (N. Zhegalov).

\* Delegates from 12 European countries, including the GDR, Hungary, Poland, Rumania, the USSR and Yugoslavia, took part in the meeting of the Editorial Board of the *Linguistic Atlas of Europe* in Bardonecchia, Italy. They discussed methodological problems of the linguistic geography related to the work on the Atlas, and the entries to be published in the first edition.

\* An *international conference on the studies of the Arab Islamic civilisation* was held in Damascus within the framework of the celebration of the

1400th anniversary of the Hegira calendar, Moslem lunar chronology. Delegates came from 19 countries, including the GDR, the USSR and representatives of the Arab League.

Soviet scholars presented the following papers: "The Islamic Studies in the USSR" (L. Polonskaya, head of the Soviet delegation), "The Russian Translation of the Koran by Academician I. Krachkovsky" (N. Osmanov) and "The Place of Manuscript Books in Arab Culture" (A. Khalidov).

\* Scholars from 20 countries, the USSR and Vietnam included, attended an *International Conference on Thai Studies* in New Delhi. It was sponsored jointly by the Centre for South Asian Studies (India), Chulalongkorn and Thammasat Universities, and the Social Science Association of Thailand.

Papers on Thailand's history, home and foreign policies, economy, language, literature, etc., were heard and discussed at the conference. V. Kornev, an associate of the Institute of Oriental Studies of the USSR AS, presented two papers: "What Is Buddhism" and "Buddhism in Thailand".

\* An *All-Union scientific conference "The Heritage of Antiquity in the Renaissance Culture"* was held in Moscow by the USSR Academy of Sciences' Scientific Council on the History of World Culture. Corresponding Member of the USSR AS V. Rutenburg delivered an introductory speech. The following themes were discussed at the plenary sessions: the Renaissance world-view and the Antiquity thought, Renaissance literature and the Antiquity tradition, Renaissance art and Antiquity. All in all, 43 papers were presented.



## BOOK REVIEWS

*Владимир Ильич Ленин. Биографическая хроника*, т. 11, июль — ноябрь, 1921. М., Политиздат, 1980, 783 стр.

*Vladimir Ilyich Lenin. Biographical Chronicle*, Vol 11, July-November 1921, Moscow, Politizdat Publishers, 1980, 783 pp.

The collection, publication and propaganda of the writings of Lenin, of materials relating to his life and work are given unremitting attention in the Soviet Union. A new contribution to the Leniniana is the latest, eleventh volume of the *Biographical Chronicle* of Lenin, prepared by the Institute of Marxism-Leninism at the CC CPSU. The more than 3,000 facts and 937 Lenin's documents (published for the first time in full or in part) give a picture of the many-faceted activities of the leader of the Communist Party and head of the Soviet state between July 12 and November 30, 1921.

It was the period of a sharp turn in economic policy, of the practical implementation of Lenin's plan of transition to the New Economic Policy adopted by the Tenth Congress of the RCP(B). The fate of the Land of Soviets at that time was being decided on the economic front. The bulk of the materials in the volume consequently relates to Lenin's and the Party's activities in guiding

economic construction, in explaining to the masses the significance and essence of NEP. They include the "Instruction of the Council of People's Commissars on Implementation of the Principles of the New Economic Policy" which defined the main directions of industrial development and principles of management. Explaining the ideas of "Instruction" which was drawn up on the initiative of Lenin and with his direct participation, Lenin in his article "Fourth Anniversary of the October Revolution" wrote that the transition to socialism can be effected "not directly relying on enthusiasm, but aided by the enthusiasm engendered by the great revolution, and on the basis of personal interest, personal incentive and business principles... The proletarian state must become a cautious, assiduous and shrewd 'businessman'..." (V. I. Lenin, *Collected Works*, Moscow, Vol. 33, pp. 58-59.) This theoretical proposition of Lenin retains its validity for the period of developed socialism as well.

The volume under review convincingly shows that even in the very difficult conditions of 1921 which required the mobilisation of all the forces and means of the Soviet state to combat the famine in the Volga and other drought-stricken regions of the country, Lenin did not confine himself to settling problems of

the day, but looked far ahead, concerned himself with the long-range development of industry and agriculture, power engineering and transport on the basis of the latest scientific discoveries. Lenin gave his every attention to the training of personnel for the national economy from among workers and peasants, to enlisting bourgeois specialists in socialist construction. He showed a keen interest in the work of the country's scientists—I. Gubkin, N. Knipovich, I. Pavlov and of many others, gave them every assistance and support.

Lenin attached great importance to collecting the manuscripts and documents of Marx and Engels, to the propaganda of the ideas of scientific communism among the broad working masses. Thus, on the instructions of Lenin V. Adoratsky, deputy head of the Main Archives Administration, began compiling a collection of selected letters of Marx and Engels. In a letter to the director of the Marx and Engels Institute Lenin asked that every assistance be rendered Adoratsky in this work, stressing that it was important to collect *all* the letters of Marx and Engels (p. 379).

No matter what Lenin was preoccupied with, no matter what problems he was concerned with, the Party, its ideological tempering, qualitative composition always remained in the centre of his attention. A number of documents in the volume show his uncompromising attitude to persons whose behaviour was not a credit to the high calling of a communist. In a leading article in *Pravda*, published on September 21, 1921, he urged to rid the Party of chance, bureaucratic, self-seeking elements. He described this work as being immensely important, stressing that without it the Party could not be

strengthened and its leading role in building a society without exploiters could not be enhanced. At the same time Lenin's criticism of mistakes made by genuine Communists was permeated with a feeling of Party comradeship and a desire to help them rectify them.

The hundreds of facts cited in the *Biographical Chronicle* unfold a picture of the genuinely communist principles of Party and state guidance, of Lenin's style of work. In the 142 days spanned by the volume Lenin took part in seven plenary meetings of the Central Committee and in 25 meetings of the Politburo, chaired 18 meetings of the Council of People's Commissars and 17 meetings of the Council of Labour and Defence. This was truly a university of Party and government work, and not only for members of the Politburo and Soviet Government, but also for many other workers in the most diverse institutions and departments who learned from Lenin how to be organised and disciplined, concrete and efficient, to put a finish to any work started.

Lenin lived for people and among people, responded to their needs. He was always eager to meet with workers, peasants and Red Army-men, to address meetings and various congresses, for through them he was always able to feel the pulse of the Baku oil region and the Donets coal fields, the railway lines of Siberia and the Caucasus, the peateries in the European part of the country. "Personal influence and speaking at meetings," wrote Lenin, "make all the difference in politics. Without them there is no political activity..." (V. I. Lenin, *Collected Works*, Vol. 34, p. 325).

The volume publishes a large number of letters and notes by Lenin addressed to G. Chicherin,

People's Commissar of Foreign Affairs. They concern the shaping of the Soviet state's peaceful foreign policy based on the principles of non-interference in the affairs of other countries, of mutual respect for independence and sovereignty, recognition of the equality of all states—big and small. We read in this volume that the Soviet government under the guidance of Lenin delegated its representatives to conduct talks with the governments of capitalist countries on the establishment of trade, diplomatic and other peaceful and friendly relations. Of great significance in this respect was the agreement reached with the American Allied Drug and Chemical Corporation's representative Armand Hammer, on the delivery of one million poods of grain to Soviet Russia. Assessing this fact as the beginning of trade with the United States Lenin demanded that the Soviet obligations under the agreement should be scrupulously observed. The agreement was concluded following a one-and-a-half hour conversation which Lenin conducted in English with the American industrialist. Hammer later recalled that although Lenin had never been to the States he knew more about it than the Americans.

The *Biographical Chronicle* gives a vivid picture of Lenin the internationalist, familiarises the reader with his activities in strengthening the world communist and working-class movement, and in elaborating

the principles of its strategy and tactics, tells of his meetings, talks and correspondence with his comrades-in-arms in other countries. Thus on July 27, 1921, he met with Klara Zetkin with whom he discussed a number of important questions concerning the international working-class movement and the education of young Communists.

Busy though he was with daily Party and state matters Lenin continued his theoretical activity. During the period covered by the volume he wrote seven articles in which he elaborated, on the basis of a generalisation of practical experience, major problems of socialist construction, exposed the enemies of the Soviet power who attempted to qualify the New Economic Policy as a capitulation of the Bolsheviks. Most prophetic in this connection are Lenin's words that "No matter what cost, no matter how severe the hardships of the transition period may be—despite disaster, famine and ruin—we shall not flinch; we shall triumphantly carry our cause to its goal" (V. I. Lenin, *Collected Works*, Vol. 33, p. 59).

The present volume, which appeared on the eve of the 26th CPSU Congress, is fresh evidence of the inexhaustibility of the treasure-house of Leninism, a teaching which today exerts a decisive influence on the minds and destinies of millions of working people all over the world.

A. Smolnikov

*Международное рабочее движение.*  
Справочник. Отв. ред.  
В. В. Загладин, Б. И. Коваль.  
М., Политиздат, 1980, 413 стр.

*The International Working-Class Movement. A Reference Book.* Ed. by  
V. V. Zagladin and B. I. Koval,  
Moscow, Politizdat Publishers,  
1980, 413 pp.

The annual reference book *The International Working-Class Movement* put out by the Institute of the International Working-Class Movement of the USSR Academy of Sciences has won broad readership as an informative publication dealing with the working-class movement and the world revolutionary process. This, sixth, issue which is devoted to the 110th birth anniversary of Vladimir Lenin, carries on the fine traditions of the publication.

The book is distinguished by a thorough analysis of the working-class movement in various parts of the world and simple presentation which is within the reach of the non-specialist. The book covers major current events in the life of the international working class, explains the standpoints of the communist and workers' parties on cardinal issues of the day, and provides a detailed analysis of the current class confrontation in the world.

The vitality and correctness are proved of the strategic conclusions drawn by the International Meeting of Communist and Workers' Parties in Moscow, 1969, about the vanguard role of the working class in the anti-imperialist struggle. The last decade of fierce class confrontation and new victories scored by the liberation movement has become an important stage in the revolutionary transformation of the world and the consolidation of the international working class.

The first chapter contains an analysis of Leninism's growing impact on current social developments and shows Lenin's own contribution to the theory and practice of the international liberation movement and the historic role and significance of Leninism as creative continuation and enrichment of Marxism. It capsulises the struggle of the Marxist vanguard of the working class against reformism and opportunism; elucidates the history of the proletarian Marxist party and its revolutionary activity which is an embodiment of Leninism in social practice. The chapter convincingly shows the great importance of Lenin's elaboration of the main content of the revolutionary process in the period following the October Revolution of 1917 in Russia, the role played by socialist states in the liberation movement, and the social, economic and political foundations of the building of socialism. It traces the emergence and consolidation, under the impact of Leninism, of parties of a new type and the world communist movement as a whole.

The second chapter deals with the role of the international working class as the vanguard of the anti-imperialist forces of the day. It reveals the dialectical interconnection between the struggle for peace and the struggle against imperialism, shows the role of real socialism in the general process of the world revolutionary movement, and exposes the fallacy of both right- and left-opportunist interpretations of the policy of peaceful coexistence. The analysis of problems related to the attitudes of the Communist and Workers' parties towards the strengthening of international peace and security is particularly informative because it graphically shows the significance of the increasing consolidation of the peaceloving forces in

their struggle against the intrigues of the opponents of detente, against the attempts to escalate the arms race made by the spokesmen of the military-industrial circles of imperialism.

Of interest in this context is the analysis of topical problems of cooperation between the Communist and Workers' parties, on the one hand, and other political organisations and groupings, on the other, of the creation of a political basis for the collaboration of broad democratic forces and the consolidation of the anti-imperialist solidarity front. They are discussed in close connection with a concrete examination of the socio-economic situation and the alignment of political forces in various regions. This analysis prompts the conclusion that in the present-day conditions the development of the theory and practice of Leninism by the international proletariat and its parties will further promote the unity of progressive, democratic forces and the spread of internationalism.

The article on the advance of the countries of the socialist community and their leading force, the working class, is rich in facts and statistical data. It covers major aspects of the consolidation of the unity and fraternal mutual assistance of the socialist countries and their cooperation in the field of ideology, and provides an allround characterisation of the economic potential of real socialism, the large-scale economic projects within the framework of socialist integration, the achievements scored by the CMEA countries in economic and cultural construction, and the implementation of the long-term target-oriented cooperation programmes. There is also a thorough analysis of the various forms of the

manifestation of the leading role of the working class in socialist and communist construction, and of the great significance of international labour initiatives.

The chapter also traces the impact of the foreign policy pursued by socialist countries on the world liberation movement and interprets the Leninist principles of peaceful coexistence between states with differing social systems as the theoretical foundation of this policy. The deep unity of the CPSU foreign policy and the Leninist principles of proletarian internationalism is shown, the attempts by bourgeois politologists to distort and slander Soviet foreign policy are exposed, and the reactionary policy of China's present-day rulers is sharply criticised.

One of the chapters is devoted to the struggle of the international trade union movement for social progress. This problem is highly important, because the objectively growing role of trade unions in social life conditioned by the mounting influence of the working class on all aspects of socio-economic and political development, considerably heightens both the responsibility of the trade union movement in the struggle for the working people's vital rights and against the aggressive policy of imperialism, and their significance as a key factor in the unification of all left, democratic forces. The position and functions of trade unions in various socio-political conditions are a subject of fierce ideological struggle. The untenability of bourgeois interpretations are proved and the fundamental difference between the roles and tasks of trade unions in countries with different social systems is shown. The book shows the role of trade unions in the political system of socialist society and gives a panoramic view

of the world trade union movement, the work of the World Federation of Trade Unions, the concerted international actions taken by mass organisations of the working people.

The second section of the book, which deals with individual countries, is particularly informative as to the political and organisational structure of the workers' movement in various countries.

This section could have been extended to include problems facing the working-class movement of such countries as, for instance, South Africa, Zimbabwe, Panama, Peru, Pakistan and Turkey. The Arab world is represented by the People's Democratic Republic of Yemen alone. It would have been appropriate to include a comprehensive article on the position of the working class in China today.

Much useful information is contained in the third section which deals with class battles in capitalist countries. It quite thoroughly eluci-

dates the acute problems of the trade union movement in Western countries and discusses in detail the connection between the economic and the political actions of the working class. There is an interesting analysis of the confrontation between the trade union movement and multinational corporations, the significance of which is constantly growing in the context of the current tasks of the working-class movement in capitalist countries.

On the whole, the book contains not only extensive reference material but also skillful and well substantiated interpretations of major current problems of the international working-class movement, of the connection between the tasks being resolved by individual national contingents of the working class and the struggle for a greater, international anti-imperialist solidarity of the working people, for peace, democracy and social progress.

**V. Gerasev**

*Социалистические международные производственные отношения.*  
М., изд-во «Наука», 1979, 304 стр.

*Socialist International Production Relations*, Moscow, Nauka Publishers, 1979, 304 pp.

A new trend is developing in economic science—the theory of the world socialist economy. On the basis of general methodological premises elaborated by the classics of Marxism conformably to the international sphere of the capitalist mode of production and generalising the real experience of the economic relations between the socialist community countries, this theory reveals the political and economic essence of the

multifarious forms and methods of cooperation between the CMEA member states, and makes it possible to lay a scientific foundation for a further improvement of the mechanism of their mutual ties.

The reviewed monograph, prepared by a group of scientists within the framework of the Scientific Council of the USSR Academy of Sciences on the Integrated Problem “The World Socialist System”, makes a noticeable contribution to the development of this theory. The book covers almost all basic questions of the political economy of the world socialist system and attempts to thoroughly analyse socialist international production relations.

The basic idea of the work is that these relations are genetically and

logically derived from the relations taking shape within the socialist countries. The authors, basing themselves on Marx's premises on derivation, conducted an original methodological analysis of that category and creatively applied its results to studying the various aspects of the development of international production relations.

Explaining the concept of derivation the authors showed its multi-level structure (both inside a country and in the international sphere of production and exchange) and an insufficient character of the definition of international production relations with regard to intra-national ones only as secondary relations to primary ones. Being a derivative, international production relations are at the same time relatively independent. That is why, the book notes, they have to be studied in a system of direct and inverse connections with socialist intra-national production relations.

Having evolved the methodological foundations of the study of socialist international production relations (Section I), the authors thoroughly characterise these relations (Section II). First of all, they analyse the most important prerequisites of the emergence and development of these relations—the socialist socialisation and internationalisation of labour and production. A dialectical interconnection is revealed of the scope and levels of the socialisation of production within a country and on an international scale. In this context, socialist economic integration can be interpreted as a major step in the internationalisation of production, but it is not identified with it.

Along with the material factors of the formation of socialist international production relations the book also

examines socio-political factors. Such a range, going beyond the boundary of a “purely economic” study, is important for understanding basic economic processes. In this connection mention should be made of the chapter dealing with the place of international production relations in the system of international social relations, which justifies the application of Marxist concepts about the correlationship of the basis and the superstructure with the international sphere.

The specificity of the essence of socialist international production relations is shown in the book at different structural angles: in an analysis of the subjects and objects of these relations, the problems of ownership and the forms of organisation of social labour.

In characterising the subjects of international production relations, attention is drawn to the question of the general subject (the state) and “partial subjects” (organisations which are granted the right by the state to make independent commercial transactions in the foreign market).

The sections of the book devoted to property relations within the system of socialist international production relations are also quite interesting. Of great practical importance is the conclusion that the process of internationalisation in the observable future will be based not so much on the “dropping” of individual particular objects from the sphere of national property relations as on the continued development of the process of the socialisation of labour which will go beyond the state bounds as a whole. Evidently, one should proceed from this basic premise in assessing the role of international economic organisations in the formation of international property.

The monograph thoroughly analyses this role in a chapter devoted to the development of appropriation relations in the sphere of cooperation between the socialist states.

Interesting information is contained in the chapter dealing with the international forms of organisation of social labour—the international socialist division of labour and its cooperation. The point is that the international cooperation of labour is often investigated as a form of the international division of labour (this is a very widespread approach). Some interpretations place cooperation on a par with specialisation. There are also views which make no distinctions between the concept “international cooperation of labour” and “international cooperation of production”. The term “cooperation” is often applied very widely and used for characterising cooperation in general. In our opinion, the definition of international cooperation of production offered by the book conformably to the present conditions, can well be accepted. This definition describes it as “cooperation in manufacturing one and the same type of similar goods indirectly manifested in a specific exchange. International cooperation increases the trend to making the labour of producers of parts of one and the same product internationally directly social”.

Section II is completed by chapters about economic laws and the patterns of the development of the world socialist economy. Both are examined from the angle of their inherence in socialism and with due account of the specificity of their operation in the international sphere. Here we would like to stress the unusual interpretations of the operation of the basic economic law in the international sphere where

collectivism and comradesly cooperation are transformed into the principle of socialist internationalism, as well as the operation of the law of value in the world socialist economy.

The monograph gives a clearcut and extensive definition of the concept “regularity”: “A law discloses more profound and more general connections and interdependences. Whereas a regularity characterises connections, though essential, that lie nearer to the surface of phenomena, that are less abstract and general. Regularity is a manifestation of the simultaneous operation of many laws, it is more concrete and therefore richer than a law.” The chapter contains a thorough definition of the two regularities of the world socialist economy: the drawing closer together of the national economies and the evening of their development levels.

Section III of the book examines the system of economic interests in the sphere of cooperation. The section ends with a chapter containing a critical analysis of the bourgeois theories of international socialist production relations. This chapter is organically linked with all other chapters of the book: it argues with bourgeois economists on the concrete questions that are positively elaborated in other chapters (on the character of the international socialist division of labour, on the subjects of international socialist production relations, on the operation of economic laws in the world socialist economy, etc.).

The authors of the book have produced a substantial scientific work on the theory of the world socialist economy. In our view, it will help the reader to better understand the processes going on in the economy of the socialist community.

**R. Evstigneyev**

E. M. ЖУКОВ. *Очерки методологии истории*. М., изд-во «Наука», 1980, 247 стр.

E. M. ZHUKOV, *Essays on the Methodology of History*. Moscow, Nauka Publishers, 1980, 247 pp.

In his last work the late Academician Zhukov (1907-1980) sums up the results of his research and reflections over the years on fundamental methodological problems of the science of history. In the focus of the author's attention are questions of its subject-matter, the correlation between it and the theory of knowledge, adherence to Party principles and the battle of ideas in the science of history.

Much space in the book is devoted to the laws of the world historical process, and in this connection to an analysis of sociological and historical laws, socio-economic formations and of problems of the periodisation of history and stages of social progress.

Methodological questions of both the natural and the social sciences, the core of scientific disciplines, are the object of a sharp ideological struggle on the international arena. Hence the need to intensify criticism of bourgeois and revisionist views, to creatively elaborate the Marxist-Leninist methodology conformably to history.

From the wide range of questions concerning the dialectico-materialistic approach to social development, the author accentuates the theoretical unity, dialectical interconnection and integrity of the major questions pertaining to the methodology of history. Social practice itself, he writes, irrefutably bears out the vitality of the Marxist-Leninist analysis of historical processes. Marx's discovery of the dialectico-materialistic understanding of social development made

it possible to devise a truly scientific method of studying history “as a single process which, with all its immense variety and contradictoriness, is governed by definite laws” (V. I. Lenin, *Collected Works*, Moscow, Vol. 21, p. 57).

The theoretical basis of the science of history, we read, is historical materialism, relying on which it studies society in its integrity and development. The Marxist-Leninist theory of socio-economic formations is of fundamental methodological significance in analysing the laws governing the world historical process. This theory makes it possible to define with scientific precision and authenticity both the general laws characteristic of different countries and peoples and the specific features stemming from historical conditions and national traditions, arms the researcher with a truly scientific methodological instrument, with reliable starting-points which enable him to find his way in the intricate labyrinth of the historical processes and phenomena being studied.

Marxists do not confine themselves to just pointing out the necessity of a process but explain exactly what socio-economic formation gives it content, what class determines this necessity (V. I. Lenin, *Collected Works*, Vol. 1, p. 401). A simple description of events and enumeration of facts are not enough to disclose the essence, the laws of social development, to understand the main contradiction which is its driving force. The author underlines that whatever the framework of investigation (chronological, spatial-territorial or any other), examination of empirical material in its logical and chronological sequence, the interconnection and interdependence of all its components remain the basic requirement of truly scientific

research. The historical process is a dialectical unity of the general and the unique. This does not mean that the general is interpreted as being alike in every respect or that uniqueness means the absence of general regularities. Exaggeration of this or that aspect leads to serious errors. A typical instance of such an approach are the pluralist conceptions of social development which totally disregard the general laws of social development. Pluralism inevitably leads to vulgar positivist empiricism which rules out the possibility of generalisation.

Societies, like nature, are not immutable; they are in movement, in constant evolution. Their study, therefore, calls for a historical approach. It was in this sense that Marx and Engels said that they know "only a single science, the science of history" (K. Marx, F. Engels, *Collected Works*, Moscow, Vol. 5, p. 28).

The book explores the interrelation of necessity and accident in the process of historical development, elucidates in this connection Engels' well-known statement that people make their own history. The determining role of the economic factor in human activity, which is recognised by Marxism, has nothing in common with the affirmation of fatalism. History is made by people whose freedom, naturally, is restricted by socio-economic and natural conditions of labour. The farther the field of research is from the economic field the more are accidents apt to occur in it. But the determining role of the economic factor does not change as a result. This does not at all mean that "accidents" play no role in history. Marx repeatedly stressed that history would bear a very mystical character if "accidents" played no role at all. "These accidents naturally form part

of the general course of development and are compensated by other accidents. But acceleration and delay are very much dependent upon such 'accidents', including the 'accident' of the character of the people who first head the movement" (K. Marx, F. Engels, *Selected Correspondence*, Moscow, 1955, p. 320).

The determining role in history belongs to the popular masses, to social classes. But science acknowledges that the individual too can strongly influence the course of historical events. In some cases the initiative of the individual can be historically progressive, awakening the popular masses, in others, it can be reactionary and act as a brake. Everything depends on whose class interests the individual represents, on how thoroughly he understands and takes into account the pressing social requirements, finds the appropriate ways of resolving the cardinal problems of the progressive movement.

When showing the economic factors underlying the historical process, writes Zhukov, account must be taken of the social behaviour of the popular masses in the epoch concerned and the social position taken by the historical personality, which is largely determined by the spiritual life of the epoch, the battle of ideas in it and the traditions inherited. This is why the problems of social consciousness and culture are also part of the subject of the science of history.

The author shows the importance and necessity of making a thorough study of the historico-cultural processes in social development, the impermissibility of an oversimplified, mechanical approach to explaining these processes which should not as a rule be directly associated with the changes in the

political and economic spheres or considered only in narrow chronological frameworks.

The classics of Marxism-Leninism have furnished unsurpassed examples of historical studies based on a comprehensive analysis and understanding of the course of events. Soviet historians, guided by Marxism-Leninism's methodological principles, have written not a few works both on the history of the Soviet Union and on world history.

In the closing chapter "History and Contemporaneity", the author writes that the Marxist-Leninist science of history when exploring the correlation of history and contemporaneity must measure up to the tasks dictated by the requirements of present-day social development. The

rich heritage of the past can be properly utilised in the interests of communist construction only provided it will be in the hands of historians armed with the Marxist-Leninist methodology.

The entire content of the monograph by the eminent Soviet historian speaks of the importance of in-depth study and elaboration of the pressing problems of the Marxist-Leninist methodology as a major condition for further raising the ideological and theoretical level of research, generalising the historical experience of socialist and communist construction and for confuting the falsifiers of history.

N. Kuzmin

M. B. НЕЧКИНА. *Встреча двух поколений. Из истории русского революционного движения конца 50-х—начала 60-х годов XIX века*. Сб. ст. М., изд-во «Наука», 1980, 566 стр.

M. V. NECHKINA, *A Meeting of Two Generations. From the History of the Russian Revolutionary Movement of the Late 1850s-Early 1860s. Collection of Articles*, Moscow, Nauka Publishers, 1980, 566 pp.

The collection under review covers a wide historiographical spectrum. It includes articles of a theoretical nature, concrete historical studies, polemical comments and texts of documents. And each one of them may be said to represent a landmark in the author's study of the period spanning the late 1850s and the early 1860s. The very dates when the respective works appeared speak of her purposeful and sustained

interest in the first revolutionary situation that shaped in Russia. Thus, the collection opens with an article that appeared in 1928 and closes with a work published in 1979.

Over the past fifty years Nechkina has written on the methodological problems of studying the revolutionary process, on the achievements of revolutionary thought, on the relations between the St. Petersburg and London centres of revolutionary propaganda. Besides articles on historiography, the reader will find in the collection a brilliant source study essay on the clandestine theme in *My Past and Thoughts* by Alexander Herzen. The collection also acquaints the reader with various aspects of the activities and the views of such outstanding personalities of Russian culture as Chernyshevsky, Ogaryov, Shchapov, Sleptsov, Nekrasov, Kovalevskaya.

Here mention should be made of Nechkina's historiographic contribu-



tion to upholding the principle of historicism when assessing prominent figures of the period of the abolition of serfdom.

The author examines the revolutionary situation of that period from the aspect of Lenin's premise about the historical objective nature of a revolutionary situation and the organic unity and interconnection of its components. An insight into the interrelation of such situations with the deep-going processes of socio-economic development helps to broaden the theoretico-methodological basis for studying the revolutionary process. Lenin's thesis that "freedoms are the by-product of the revolutionary struggle" (V. I. Lenin, *Collected Works*, Moscow, Vol. 17, p. 127), and how he applied to the Reform of 1861 is examined by Nechkina in the context of a critique of the official and liberal-bourgeois historiography of that period.

She distinguishes between the "crisis of the upper crust" and the political crisis of the ruling class, shows that the "crisis of the upper crust" was characterised by the objective position of the ruling class as a whole in the class struggle of that period and the ideological phenomena which reflected the ruling class's awareness of the revolutionary situation. The crisis of government policy is regarded as a derivative of the "crisis of the upper crust", which manifested itself in the more narrow sphere of government actions.

The major part of the material in the collection treats of the revolutionary movement in Russia as a whole. The possibility of a revolutionary situation developing into a revolution is determined, as is generally known, by the class capable of organising and heading revolutionary mass actions strong enough to break

the old government which never, "not even in a period of crisis, 'falls', if it is not toppled over" (Ibid., Vol. 21, p. 214). Because of the absence of such a class in Russia in the mid-19th century, the revolutionary situation did not develop then into a revolution. The peasantry, the author writes, proved not to be that revolutionary class capable of passing on to revolutionary mass actions strong enough to break the autocratic government system.

The emphasis in the book is on the problem of the role of a conscious revolutionary movement that expressed the aspirations of the oppressed masses and actively fought for their interests. Lenin attached great importance to active revolutionaries winning the support of the masses.

The problem of the masses remained a central one in the revolutionary strategy of the 19th century. Although a class struggle had shaken the Russian Empire already in the epoch of feudalism, a revolutionary struggle, however, began under the banner of a definite revolutionary ideology (which distinguished the revolutionary movement from spontaneous revolt), only with the uprising of the Decembrists who were "helpless without the support of the people" (Ibid., Vol. 19, p. 329). As for the peasant movement in the 19th century, it developed in isolation from such an ideology. The revolutionary democrats, from Chernyshevsky to the heroes of the "Narodnaya Volya" (The People's Will) Party, who expressed the vital interests of the peasant masses were unable to win them over. (It was only at the proletarian stage of the revolutionary movement, that unfolded in the mid-1890s, that revolutionary theory was united with the mass movement.)

The realisation by Herzen and Ogaryov of the important fact that the Decembrists had lacked the support of the people served as the starting point, we read in the collection, of their search for a correct revolutionary theory. Nechkina very aptly calls their journal *Kolokol* (The Bell) a veritable encyclopaedia of that search.

The author shows that solution of the practical tasks that confronted the revolutionary camp in Russia facilitated the evolution of a revolutionary-democratic ideology and the organisation of the country's revolutionary forces. Her scrutiny of the clandestine activities of Chernyshevsky, Herzen and Ogaryov in the 1860s in "Zemlya i volya" (Land and Freedom) of the most important Russian revolutionary organisation after the Decembrists, is distinguished by a fundamentally new approach.

The unity of theory and practice, one of the basic theoretical premises in studying the revolutionary movement, is consistently underscored throughout the book. It contains a penetrating analysis of the major documents of revolutionary thought and of the revolutionary activities in the period under review.

A notable scholarly achievement is the author's analysis of the history of the relations between the two centres of the Russian liberation movement: the St. Petersburg (*Sovremennik* (The Contemporary) of Chernyshevsky, Dobrolyubov and others) and the London (*Kolokol* of Herzen and Ogaryov) centres. Realisation of the qualitative integrity of the revolutionary movement in a revolutionary situation despite differences existing then meant overcoming the prevailing traditions in historiography, opened the way to studying the process of

unification of revolutionary elements, of establishing a single organisation and of preparation for revolutionary actions.

The abolition of serfdom brought with it the collapse of the feudal-serf system which gave way to capitalism. The first generation of revolutionaries who came from the nobility was succeeded by revolutionary democrats. The book shows, convincingly and graphically, the meeting of the two generations of revolutionaries, their joint elaboration of the programme and tactics of the movement, and the joint organisation established by them.

The author does not pass over in silence the controversy and differences between Chernyshevsky and Herzen who showed liberals' vacillations. It was characteristic of the revolutionaries who came from the nobility to place their hopes on a revolution from above, which stemmed from their belief in an enlightened absolutism. But Chernyshevsky, observing, at a different stage of the social movement, the liberal camp which played an independent role in the liberation struggle, mercilessly criticised its representatives although he did not deny the possibility of contacts with the liberals.

Lenin characterised Chernyshevsky and the liberals of the 1860s as representatives of two historical trends which after the Reform of 1861 and up to the 20th century determined the outcome of the struggle for a new Russia (Ibid., Vol. 17, pp. 113-114). The articles in the collection clearly show this on concrete examples.

The content of the book, as we see, is broader than its title, *A Meeting of Two Generations*, indicates. This theme is more than warranted as a subject of research, for the presentation of the problem in pre-

cisely such a context opens up new avenues for research.

Lenin wrote about the continuity of generations in the Russian revolutionary movement as follows: "Just as the Decembrists roused Herzen, so Herzen and his *Kolokol* helped to rouse the *raznochintsi*—the educated representatives of the liberal and democratic bourgeoisie who belonged, not to the nobility but to the civil servants, urban petty bourgeois, merchant and peasant classes" (Ibid., Vol. 20, p. 245). The mass section of the *raznochintsi* intelligentsia entered the arena of public activities, carrying out a "revolution" in literature, art, aesthetics, in the prevailing notions of duty and morality. The meeting of two generations of the Russian revolutionary movement is examined in the book in the person of their leaders and of other outstanding figures.

A broad study of the generation of "revolutionaries of 1861" at the level of the common people is an important task, the accomplishment of which will help to deepen our knowledge of that vivid period in the public life of Russia. (Such research is already being carried out by a group of historians headed by Nechkina.) The collection under review is an example of how such a task should be tackled. It shows that a successful study of the rich history of the liberation movement in Russia at all its three stages calls for a consistent theoretico-methodological approach, careful selection of sources and their thorough analysis.

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**В. Ф. ПЕТРОВСКИЙ.** *Доктрина «национальной безопасности» в глобальной стратегии США.* М., изд-во «Международные отношения», 1980, 336 стр.

**V. F. PETROVSKY,** *The "National Security" Doctrine in the Global Strategy of the USA,* Moscow, Mezhdunarodniye otnosheniya Publishers, 1980, 336 pp.

American foreign policy during the period of the Carter Administration assumed an increasingly expansionist character. This was not an accidental zig-zag in Washington's actions, which has embraced the conception of militant hegemonism and gambles on military force as the main instrument of foreign policy. One of Washington's politico-ideological "guidelines", rightfully considered as the credo of

its foreign policy, is the "national security" doctrine. This is the subject of the monograph under review.

Drawing on extensive factual material the author examines in detail the continually operating factors in the American political system, which conduce to its aggressive tendencies. He traces the evolution of the "national security" doctrine, shows who put it into operation—the military and their apologists who urge acting from "positions of strength" in foreign policy.

The imperialist claims, which constitute the essence of the "national security" doctrine, are particularly clearly evident in Washington's attempts to upset the existing US-USSR strategic balance in its favour. And the doctrine is used as a convenient propaganda cover for pursuing such a course. Inspiring fear in the public

with the myth about a "Soviet military threat" has become an ingredient of the "national security" doctrine. Particularly dangerous is the concept of a so-called limited nuclear war, included in the doctrine.

The closing chapter of the book "Disarmament—the Way to Real National Security", sums up the author's comprehensive study and resultant

conclusion is that the real national interests of the United States, as also the solution of the problem of its security and the security of the peoples of the world lie not in the cult of force, not in the arms race but in putting an end to it, in the deepening of detente.

**G. Anatolyev**

**М. А. ЧЕШКОВ.** *Критика представлений о правящих группах развивающихся стран.* М., изд-во «Наука», Главная редакция восточной литературы, 1979, 243 стр.

**M. A. CHESHKOV,** *A Critique of the Concepts about the Ruling Groups in the Developing Countries,* Moscow, Nauka Publishers, 1979, 243 pp.

This monograph can serve as an example of an heuristic critique of the concepts evolved in non-Marxist political science and sociology about ruling and dominant groups (RDGs). The significance of these elements of the socio-political structure in determining the destinies of the developing countries is fairly widely recognised in Soviet literature. But opinions differ regarding assessment of the nature of the said groups, and specifically regarding assessment of the degree, character and "autonomous" tendencies of the RDGs with respect to other classes and social groups and to the propertied class which has already "established itself" as a category, in the first place.

The fact that the subject of study and, consequently, its nature have still not been fully constituted (at any rate for most of the Afro-Asian countries), adds to the difficulties of

any critical analysis, especially when the subject is interpreted in widely different ways. In his critical examination of the prevailing notions about the subject Cheshkov has succeeded in defining the real contours behind the various conceptual constructs.

He divides the diversity of views and patterns into three areas: neocolonialist, national-etatist and left-radical. Such a typology makes it possible to create a sufficiently full and differentiated picture of the studies on the subject. As the author underlines, the RDG concept did not simply roll off the tip of a pen but "matured under the weight of objective circumstances". And it was not only a matter of such dramatic events as military coups in the developing world, or the tense struggle for power by non-military means, but rather that the character of power and mode of economic domination clearly did not assume the "classic" form, that is, did not correspond to the idea that the RDGs are instruments of the rising propertied bourgeoisie.

The relative "non-manifestation" of the nature of the RDGs, the existence in them of various aspects, as also the growing significance of these social groups as a result of the tendency towards the merging of economic (the state sector) and polit-

ical power in their hands, demanded of the various participants in the social process in the developing countries the elaboration of sufficiently reliable definitions of the nature of this new phenomenon.

It is obvious that the representatives of the three aforementioned subdivisions did not confine themselves to creating abstract patterns but occupied a definite position in relation to the RDGs, ranging from an apologetic to a critical one. As the author notes, knowledge of the RDGs evolved in a struggle of various socio-ideological trends. Therefore not only notions of the given subject were inevitably evident in the theoretical constructs but also characteristics of the "theoretical subject" itself.

As the author underlines, the theoretical constructs and subject they accord with do not appear in a finished form. On the contrary, these constructs arise and assume ever more finished forms as the RDGs themselves "ripen". At the early stages these social formations naturally retain their "birth marks" that draw them together with other elements of the socio-political structure and, in the first place, with their own bureaucracy, politicians and, of course, bourgeoisie. The division of these various socio-class communities and elucidation of the nature of the RDGs call for a thorough study of their connections with economic factors, the state sector, the institutions of power, the world capitalist system and also of their contradictions with the masses. All this involves in the theories examined in the book a wide range of major general sociological categories in application to the developing countries.

It is important to note that the author has succeeded in linking together his critical analysis of non-

Marxist concepts of the RDGs in the developing countries, with the studies of the social, economic, ideological and political development of those countries, and with the general theories put forward during those studies. The organic nature of such links proves that the theme discussed by Cheshkov is both topical and theoretically significant in the context of comprehending the general laws and specific features of developing society. Noteworthy is the desire of the author to cover all the main approaches—personal, institutional and economic—used by non-Marxists in studying the RDGs as an entity.

The author ties in his studies with the logic of the movement of the knowledge about the developing countries and in particular with the changes in the correlation of various sociological disciplines. His desire to combine methods of sociology and political science with those of political economy in his research of the ruling groups is therefore quite logical. The validity of this approach is confirmed by the trend of social thinking that became apparent in some countries of Asia and Tropical Africa in the early 1970s, though the principles of the application of categories of political economy to the realities of the developing world have not yet been adequately elaborated. The said trend is not of a political and economic nature, in the Marxian sense, but it reflects the desire of scholars in some Afro-Asian states to study the economic consequences of politics and political "ways out" for the economy.

There is no objection to Cheshkov's linking various concepts of the RDGs with general theories of the development of the newly sovereign states. This link is shown quite clearly in Chapter I where the major

groups of concepts within which the concepts about the ruling groups in the developing countries emerged, are examined in close interconnection with the theory of modernisation. That theory was elaborated in the early 1950s, together with the theories of "stages of economic growth" (W. Rostow), and "the industrial society" (R. Aron) and the concepts of "state-nation", "social changes", "configuration of values", etc., and was designed to facilitate the transition from the "classical" to new methods of exploitation of the peoples of former colonies.

If the objectives set by the theory of modernisation were to be attained, the ideologists and politicians of neo-colonialism had to find such a social entity in the young states which could act as the "mediator" between those countries and the capitalist West, successfully assume the Western system of universal values and pass it on to the masses. Realising that the traditional elite (feudal, semi-feudal and tribal aristocracy) was a no good moderniser, the theoreticians of neo-colonialism set their sights on the new ruling groups as the social agent able to fulfil the tasks of modernisation and to direct the development of Afro-Asian countries along capitalist lines. Cheshkov shows that at that stage the RDGs were presented as a "modernising elite", "rational administration", "new middle strata", etc. And the neo-colonialist concepts were socially functional and satisfied the current tactical interests of both the neo-colonialists and the RDGs (especially the future potential ruling groups).

Revealing the interconnection between the concepts of the ruling groups and the changes in the general theory that occurred in the late 1960s and early 1970s, the author

rightly notes that that period witnessed the modernisation of the general theory of neo-colonialism, the proponents of which were ever more often forced by the course of events to recognise the permissibility, and sometimes even inevitability, of other, non-Western, patterns of development. At the same time the concepts which most strongly bore the stamp of Western centrism were sacrificed.

In the first half of the 1970s new, national-etatist and left-radical, socio-ideological trends appeared which built their critique of the neo-colonialist theory around such major problems as the interconnection between the centres of world capitalism and the developing societies, the role of external and internal factors of development and backwardness, the correlation between society as a whole and its individual sub-systems. The first trend asserted the primacy of the national state in the economy and, consequently, indirectly substantiated the leading role of the RDGs in the structure of the ruling classes, while the second trend connected its interpretation of the social essence and functional role of the RDGs with the concepts of "dependent development" and "peripheral capitalism".

Summing up the findings of his research of the RDG carried out in the 1970s, the author emphasises that the ruling groups were now defined not simply as a social entity, wielding power, as before, but as an entity whose power is based on the state which is a direct agent of the economy. Recognition of this determined the subject of research, which was earlier formulated in abstract categories of power in general or economic power in particular.

The greatest difficulty of a scientific investigation like the one done

by Cheshkov lies in choosing the materials pertaining to individual countries which could convincingly show the "efficiency" of a concept designed to serve as an explanation of a phenomenon typical of the entire developing world. The chosen theoretical constructions have to be representative, that is, original, socially significant and associated with the names of respected scholars.

Assessing the book as a whole, it can be said that it is an important and fundamental work. It belongs to that still rare category of research where well-grounded criticism of re-

lated concepts organically grows into the author's own, original interpretation. It is also the first Soviet study of the RDGs in the developing countries, which thoroughly analyses the emergence of this important element of the social structure. Cheshkov investigates the social structure and its elements not as something existing once and for all but as a variable and complex process giving rise to new structures. This has allowed him to make some interesting forecasts.

**A. Belsky,  
B. Erasov**

**В. К. ВРУБЛЕВСКИЙ.** *Труд на пороге третьего тысячелетия.* Киев, изд-во Политической литературы Украины, 1980, 447 стр.

**V. K. VRUBLEVSKY,** *Labour on the Threshold of the Third Millennium,* Kiev, Politicheskaya literatura Ukrainy Publishers, 1980, 447 pp.

Our time is characterised by the dynamic development of social production and the acceleration of social progress. As is known, social labour is the main source of all these changes. This is why V. Vrublevsky's fruitful attempt to delve into the problem of labour in the context of the scientific and technological revolution merits consideration. One asset of this work is that the author adopts a comprehensive approach to a theme which is a pivotal one when it comes to investigating all economic relations. The author begins by elucidating the very essence of the concept of "social labour", its place within the system of social relations, and by analysing relationships be-

tween the mode of production, the economic basis and problems of the genesis of labour. He attempts to correlate categories and the changes introduced by the scientific and technological revolution and to trace their influence on the development of productive forces and production relations.

In examining the dual nature of the process of labour—its relation to nature and relations between people in the process of their influence on nature—the author comes to the conclusion that from the methodological standpoint these two facets are most plainly elucidated with the aid of such categories as the "content of labour" and the "nature of labour". The first one makes it possible to characterise the material and personal aspects of the process of labour, and the second—the socio-economic relations within the framework of which this process is carried on.

The content of labour makes it possible to show how, by what means, man acts upon nature in creating for himself the necessities of life, and also to ascertain the de-

velopment level of the working man himself. Changes in the content of labour are directly dependent upon the changes in the material, substantial, elements of labour and first and foremost upon changes in the instruments of labour.

The character of labour indicates the essence of the relations people enter into in the process of their joint labour activity. This methodological approach to the conception of the categorial apparatus makes it possible to render the relevant definitions more precise and systematised, and also to rectify the inaccuracies in the use of the concepts of "nature of labour" and "content of labour" still occurring in economic and philosophical literature.

Vrublevsky gives a thorough analysis of the forces of production as an involved and integral system, including not only the purely productive sphere but also the education of working people, development of their creative capabilities by means of science and culture, scientific organisation of labour and scientific management. It is correctly noted in the book that socialist orientation in scientific and technological progress presupposes a still greater emphasis on a comprehensive development of each member of society. This to a maximum extent accords with the historic mission of the working class—to engender the prerequisites enabling people to become the makers of their history.

The author substantially analyses the impact being exerted by the scientific and technological revolution on the development of labour in different spheres, and on the advancement of the working people's cultural and technical standards, as

well as on the gradual coalescence of different contingents of working people in respect of qualifications and education, training, the drawing closer together of people engaged in physical and mental labour. Much attention is devoted, in particular, to process involved in the transformation of agricultural labour into a variety of industrial labour. The author indicates specific areas in which the STR is influencing the eradicating of the essential distinctions between town and country and between mental and manual labour.

One of the chapters is devoted to the specific features of labour in the sphere of science. In the age of the STR this labour acquires an increasingly social character, being an organic part of the labour of an aggregate worker, i.e., labour distinctly exhibiting the character of universal labour. In discussing the practical results of scientific labour the author rightly notes that a condition crucial to the successful introduction of R&D projects is the high level of their readiness for industrial utilisation.

Vrublevsky considers large complexes composed of institutes, design bureaus, experimental production and pilot-plant facilities to be effective forms of integrating scientific labour and production. Such complexes reduce the time needed to complete the cycle—from investigations to implementation in the national economy.

Containing a number of substantial and original conclusions and proposals, the monograph under review is undoubtedly of practical as well as scientific interest.

**V. Fedinin**

*Современная советская литература в духовной жизни общества развитого социализма*. М., изд-во «Наука», 1980, 383 стр.

*Contemporary Soviet Literature in the Spiritual Life of a Society of Developed Socialism*, Moscow, Nauka Publishers, 1980, 383 pp.

This monograph is an attempt at a panoramic survey of the contemporary literary process. The book, conceived as a well-rounded portrayal of literature in its aesthetic relationship with life, was written by a team of 14 authors, who have achieved such inner unity of approach, such coherence of exposition of a definite system of ideas that the result is a scholarly monograph worthy of its name.

The authors analyse the general problems of the relationship of literature to ideology and social life, examine the characteristic features of socialist realism at the present stage of its development, and show how literature under mature socialism is enriched ideologically and artistically. These general observations are further developed and concretised in the chapters dealing with the conception of the individual in contemporary literature and the relationship of the individual to society and nature, more specifically, with such fundamental problems as man and the contemporary world and their reflection in contemporary literature, the humanist spirit of Soviet literature and its fight for the moulding of the harmoniously developed person.

In the chapter "Spiritual Life, Ideology, Literature", the author, A. Zis, discusses the harmonious integration of a scientific and an artistic examination of life under developed socialism and the intercon-

nection of philosophical and artistic thinking.

The philosophical and aesthetic criteria of labour are defined in a chapter in which an attempt is made to describe the basic, concrete tasks of imaginative literature and of literary criticism in the conditions of the ongoing ideological struggle, tasks that are dictated by the philosophical and aesthetic aspirations of our society. Here literature is regarded as an inalienable part of the way of life of a people; in our society it is a powerful force working for the establishment and development of the socialist way of life. Not surprisingly, to fulfil his mission, a writer today must also be a sociologist, philosopher and historian.

In the chapter "Aesthetic Enrichment of Socialist Realism and Enhancement of the Social Role of Literature", the author, N. Gei, shows that the components of artistic form are inseparably linked with ideological content, the components being carriers of a definite "semantic energy". Turning to the work of Vasili Shukshin, Victor Astafyev, Sergei Zalygin, Yuri Trifonov and Chinghiz Aitmatov, the author shows that the intrinsic possibilities of the method of socialist realism are being revealed and that as a result the emotional and psychological influence of Soviet literature on people's spiritual life increases. This influence is connected not only with a search for new artistic forms, the enrichment of the style of individual writers, and the treatment of new subjects, but also, to a considerable extent, with a harmonious combination of the ideas of internationalist and national traditions in Soviet literature.

One of the authors of the book, V. Oskotsky, notes the growing process of mutual enrichment of nation-

al literatures and mutual influence of national traditions of poetic imagery. M. Kurginyan discusses the increasing significance of the philosophical and aesthetic factor in the portrayal of conflicts by Soviet novelists and playwrights. She underscores the importance of "moral memory", or a thoughtful attitude to the best moral traditions of the people, for the benefit of both society and literature. After tracing the development of the "dialectics of the soul" in contemporary literature and describing the distinctive features of psychologism in Soviet writing, L. Kiseleva concludes that in Soviet literature "stream of consciousness" has given way to what may be called "stream of realisation" (becoming conscious). This consists in a psychologically more profound portrayal of man's search for truth and of the gradual "clearing up" of his soul, his thought and his understanding of the realities around him.

The development of Soviet literature can be properly viewed in the light of the positive changes and renewal in genre writing and wide-ranging stylistic search. Speaking of the dynamics of genre writing and of stylistic tendencies in contemporary Soviet literature, G. Trefilova calls attention to the moral fervour, a seeking after truth, of today's writers and their "partnership" with the characters they depict in their novels and stories—they seem to include themselves in the action being described, thereby demolishing the "invisible curtain" between the world of imagination and the artist. All these complex and important phenomena are inseparable from the general tone and pace of our life; they are one more proof that literature sensitively responds to the demands set forth by life itself, being characterised by what the author calls an

"artistic-and-cognitive initiative".

The conception of the man-nature-society relationship in contemporary Soviet writing is the subject of a discussion by G. Belaya, who conducts an interesting and thought-provoking survey of a remarkable intellectual search both of contemporary man and contemporary literature. There is a profound philosophical, moral and historical meaning in the fact that in our literature today nature is spoken of with a feeling of anxiety and deep concern. Never before has the subject of our moral responsibility for the state of the natural environment, both before ourselves and before future generations, been treated with such seriousness in literature. Soviet writers want us to see the universe in the unity of nature and man and to exercise moral self-discipline in this regard. The subject of the man-nature relationship is organically linked with the whole complex of ideas and sentiments of our society, with real humanism in Soviet life.

Other chapters of the book, drawing on a wide range of material, show how Soviet literature is quick to respond to the demands of the time, closely following people's spiritual search and refining the conception of the individual. In their examination of contemporary Soviet writings in which the subject of the moral vigour and creative spirit of the new man is treated, the authors note an increasing tendency towards raising psychological and moral questions that are penetrating, varied and complex; they challenge the reader to answer such questions as what he is and what he is capable of.

The book discusses all the most important facets of the most intricate relationships between contemporary Soviet literature and the spiritual life of Soviet society, the philosophical

and aesthetic foundation of this unprecedented union of literature and life, and the most significant phenomena in literature testifying to its active and effective participation in the building of a new moral and intellectual culture and in the moulding of the new man.

The monograph is distinguished by its successful synthesis of views and ideas of individual authors, which come across to the reader as a harmonious whole.

N. Zhegalov

М. М. БАХТИН. *Эстетика словесного творчества*. М., изд-во «Искусство», 1979, 423 стр.

M. M. BAKHTIN, *The Aesthetics of Literary Art*, Moscow, Iskustvo Publishers, 1979, 423 pp.

This new edition of Bakhtin's works, some of which are published here for the first time, covers the period from 1919 to 1974. The most important article in the book is undoubtedly "The Author and the Hero in Aesthetic Activity" written in the early 1920s, whose subject-matter links it to *Problem of Content, Material, and Form in Literary Art* (1924).

According to Bakhtin, an artistic work is not an object in the full sense of the word, but a spiritual phenomenon, an artistic activity in the process of which two subjects interact: "I" and "another". The relationship between "I" and "another" is not confined to aesthetic activity; it is found in life generally and is therefore of a universal character. In art, however, the author is obliged to see and to portray precisely his own, immanent experience.

The creative principle of the author's relationship to the hero consists in that the artist-creator is capable of seeing "another" (the hero) not on a practical level of life, but on

an axiological level: the specifically aesthetic is the "reaction on the hero" gathering all cognitive and ethical definitions and evaluations into a single whole. The author knows both what the hero himself knows and what the hero does not know and does not see.

In order to see and to show the hero as "another", the author must define those aspects of the hero's internal and external makeup that lie "beyond" the hero himself, that is, certain conditions providing a glimpse of the hero from the outside.

Bakhtin describes the "dialogue-like" interaction of the author and the hero in aesthetic activity. The centre of all coordinates of the imaginative world—spatial, temporal and semantic—is always the hero.

Bakhtin relates exterior makeup first of all to the spatial form of the hero. Man is incapable of objectively perceiving his own exterior makeup; only "another" can see me in my exterior makeup and bring my personality to full exterior expression.

The second aspect of the hero's spatial form is his experience of the external boundaries around him. Only in another person, Bakhtin says, am I given living, aesthetically (and ethically) convincing experience of human finiteness, of the empirical, limited world of material objects. If in another person everything that

is ideal gravitates towards that which is given in him spatially, according to Bakhtin, then everything that is spatial, given in me, gravitates towards the nonspatial, interior centre.

The case is similar with actions, external deeds, which constitute the third aspect of the spatial form of the hero. Insofar as a person's actions are governed and experienced by himself from within, it is impossible for a character to assess his actions himself. Besides, action that is experienced from within cannot be experienced visually and spatially. And the impending aim of an action, the anticipation of its future realisation, "dissolves" that which is presently given in the world of material objects. Only the action of another person, says Bakhtin, can be imaginatively understood and given shape by me; action from within myself cannot, in principle, be artistically portrayed and brought to completion.

All three aspects of the spatial form of the hero shape his exterior makeup; that is, they are "trans-gradient" with respect to the mental outlook of the hero himself.

From the position of his "dialogue aesthetics"—the non-fusing unity of hero and author—Bakhtin criticises what he sees as the two basic trends in aesthetic thought of the 19th and the beginning of the 20th century: the aesthetics of "sensuous shining forth", or "expressive" aesthetics, and formalistic aesthetics, or "impressive" aesthetics. "Expressive aesthetics" (Lipps, Kogan, Volkelt) is oriented to the hero, to his definition of himself, and loses thereby the second obligatory participant in an artistic event—the author. "Impressive aesthetics" (Riegl, Hildebrand, Hanslick, Fiedler), by transferring the centre of gravity to the creative aspect, reduces the hero to passive

material to be shaped and portrayed.

The second plane of author-hero interaction in aesthetic activity, according to Bakhtin, is the "temporal whole of the hero", that is, the inner (mental), not external (bodily), reality of a person, being reflected in a literary work.

Bakhtin examines the general conditions for the temporal ordering or regulation of a person's inner life—of his "soul". Only "another" (the author) can perceive and define the hero's "soul" as an entity and see that which is limitless within the limits of objectification. The aesthetic approach to the inner existence of "another" demands above all that the author perceive him in terms of values, the author being "not with him and not in him, but outside him". Only "artistic vision gives us the whole hero, computed and measured thoroughly... From the very beginning we must try to find his semantic boundaries..." Thus, all forms of aesthetic embodiment of inner life cannot, in principle, be forms of pure self-expression, but are forms of relations to "another" and to his self-expression. In other words, all aesthetically important definitions are "trans-gradient" with respect to life experienced from within, and "this alone imparts to them power and importance".

All that has been said, according to Bakhtin's logic, is designed to clearly mark the boundary between the "hero", "agent of semantic, vital content", and the author, "agent of the hero's aesthetic completion".

The architectonics of artistic vision regulates not only spatial and temporal but also purely semantic aspects, for form can be not only spatial and temporal but also semantic. "The semantic placing of the hero in life..., his position in it in

terms of values," too, acquires significance.

Bakhtin defines more precisely the role of the author as follows: "The writer's task is to find the important approach to life from without. In this way the writer, and art generally, create an entirely new vision of the world, an image of the world."

Published in this book for the first time are fragments of a work entitled "The Novel of Education and Its Significance in the History of Realism", written towards the end of the 1930s. The most complete of the fragments is one about Goethe. Bakhtin ascribes particular importance to the exceptional "fusing of time with vision and thought" by Goethe in all spheres of his versatile activity. The basic features of this vision are: a confluence of time (of the past and the present); complete and clear visibility of time in space; inalienability of the time of an event from the concrete place of its happening; visible, essential link between times (the present and the past);

creatively active character of time (the past in the present and the present in itself); necessity linking time with space and time with time; and finally, and this is basic, necessity of inclusion of future which makes for the completeness of time, in Goethe's images. Bakhtin emphasises the important role played by Goethe's "feeling for time" in the process in which all subsequent European culture overcame temporal abstraction which was characteristic of the Middle Ages.

Bakhtin's notes published in this book, which date back to the early seventies, are comments on some of the recent trends in philological thought both in the Soviet Union and abroad. In particular, Bakhtin discusses points of basic difference between his methodology and structuralism, and defends the methodology of functional study of literature as being fruitful and productive.

V. Makhlin

Н. ЭЙДЕЛЬМАН. *Пушкин и декабристы. Из истории взаимоотношений*. М., изд-во «Художественная литература», 1979, 422 стр.

N. EIDELMAN, *Pushkin and the Decembrists. From a History of Their Relations*, Moscow, Khudozhestvennaya literatura Publishers, 1979, 422 pp.

In his famous address at the ceremony of unveiling the monument to Pushkin in Moscow Dostoyevsky said that the poet had taken with him to his grave a great mystery which must now be discovered without his help.

It was the mystery of his personality.

This new book about Pushkin by Eidelman is rich in information and hypotheses, and is populated by Pushkin's contemporaries whose lives in one way or another became involved with his destiny. But as for what we call "instructiveness", the book offers no more (but also no less) than a means with which an unfaltering, penetrating probe into Pushkin the man and poet is carried out.

Eidelman's book is addressed to a wide circle of readers, but it is written for those who know Pushkin's work and know it well and have retained much of it in memory.

Even the briefest quotations from a poem should immediately and vividly recall whole verses to our mind.

The reader has not gotten beyond the first pages, having just encountered the fantastic figure of Ivan Liprandi, that is, having just entered the world of conspiracies and duels, adventures and betrayals, when he is plunged into a lengthy (tens of pages) and detailed textual analysis of the rough copy of *Notes on Russian History of the 18th Century* which Pushkin wrote in 1822, and of the manuscript collection of Nikolai Alexeyev, Pushkin's friend from Kishinev.

Eidelman does not simply state his conclusions, but takes the reader along in a literary investigation, involving him in the actual processes of research and immersing him in drafts, notes, corrections and revisions, words and passages that are crossed out and questions of handwriting. After this the reader is better equipped to perceive the subject that follows: the complex relationship between Pushkin and the Decembrists; their friendship with Pushkin affected by separation which was all the more tormenting because mutual understanding between them, kept apart by great distances, unavoidably began to fade; and the chronicle of Pushkin's life during those 264 days from December 14, 1825, to September 4, 1826, when Pushkin was given permission to go to Moscow from Mikhailovskoye where he had been exiled. On the basis of a close reading of the work written during this period and a careful examination of the circumstances in which the writing took place, Eidelman recreates the historical context of the text.

Poems long familiar to us appear new and fresh when Eidelman, com-

paring them and studying them in their relationship to one another, determines, for example, what from his point of view is the more exact date of the composition of the poem *André Chénier*; or when he considers the *Notes*, referred to earlier, as clearly a piece of polemics with the well-known writer and historian Karamzin; or when he puts forward the fascinating hypothesis according to which Alekseyev's manuscript collection which opens with Pushkin's *Notes* (and which includes other articles by various authors on the subject of history) was copied from Pushkin's papers which have not survived. It seems that the 23-year-old poet had intended to make a serious study of Russian history and the *Notes* were only a beginning. And if the *Notes* had remained as such without being developed further, a possible explanation is that Pushkin's newly acquired "Decembrist" views of history were already changing at that time and were becoming more complex....

We need to be keenly aware of—and at times also be able to reconstruct—the historical context in order to understand not only what Pushkin wrote, but also what was written about him by others who knew him. For memory depends on a multitude of circumstances; it is something fluid, not fixed, and so the image of the person being recalled also becomes fluid. We need to know how to read even those memoirs the sincerity of whose authors is not in doubt.

Eidelman points out that we know in the main the later stories about the Lycée and about Pushkin as told by erstwhile pupils of the Lycée—that which had been gathered together or written down in the 1850s and later; and we form our idea of the whole history of Pushkin's class

of Lycée pupils by the cheerful tone of most of those stories.

But there was much that was not so "cheerful". Pushkin's relations with those very Decembrists without whom, says Eidelman, "there would have been no Pushkin", were much more complex than are sometimes spoken of or written about. Instances of this are Pushkin's aesthetic skirmishes with Ryleyev and Bestuzhev, and the repressed anger against Pushchin who did not trust a friend with secrets of the Decembrists, and the humiliating slander of Pushkin as someone "dangerous", an idea in which even such a remarkable person as Ivan Gorbachevsky, the Decembrist Cato, still believed after many years.

Of course, we now understand (along with the author of *Pushkin and the Decembrists*) that *Eugene Onegin* and *Boris Godunov* contributed much more to the "common good", to the liberation of man and of what is humane, in a broad historical sense, than his earlier verses in which Pushkin directly attacked the autocracy. We can now say, with the author, concerning Pushkin's state of mind in the years 1825 and 1826, that "in the midst of executions, prison sentences of hard labour, internal exile and police surveillance, Pushkin conducted himself with the remarkable dignity of a free man". And we may add that Pushkin preserved his inner freedom (in the spirit of his poem "From Pindemonte") not only in relation to the authorities but also in relation to his friends with whose views he did not always agree. Such freedom does not come easily; it is achieved at the cost of spiritual suffering.

All this we now know. But for Pushkin, then a young man, it was painful suddenly to find himself alone both in his views on art

(Ryleyev and the well-known poet Zhukovsky expected "great aims" from him, meaning by these words the exact opposite, while Pushkin knew that his aim was greater but could not convince either of them of this); and in his views on history, an area where he had overtaken contemporary thought, even the advanced thought of his time, and found fewer and fewer people who shared his views. As time went on, the tragedy deepened; the sense of isolation was more keenly felt and was increased by an awareness of how "remote" were those who, it would seem, could understand him better than others.

But after Pushkin's death, his tragedy, whose meaning seemed so hopelessly buried in the dark, begins to yield its secret; an understanding of the tragedy, unthinkable during the poet's lifetime, emerges; and it has come to pass that there is once again a meeting of minds among the best people in Russia.

*Pushkin and the Decembrists* is a historically optimistic book, and not at all because it is written today when Pushkin's triumph over the circumstances of his fate is so entirely obvious. The book's optimism is not the optimism of the final conclusion, but an optimism that is manifest in the author's patient and painstaking analysis itself, in every detail, in every "molecule" of the book.

There is no evasion in the book of the difficult, even "ticklish" moments; for example, it does not try to "prettify" Liprandi just because he had been a friend of Pushkin's, or to pass over in silence their friendship just because Liprandi later became a spy. Without skipping over all this, the book traces step by step Pushkin's feat of courage attained at the cost of personal tragedy.

This is a book written by a historian who remains on every page a scholar of history, and not simply a writer on historical subjects. But the strength of the book lies in the fact that the author's view, while being historical, is also above-historical (if one may put it that way) in the important sense that the great poet is seen here not simply as one particular individual who was a friend of Pushkin and Alexeyev and who was persecuted by Tsar Nicholas I and the head of the secret police Benkendorf, but as a man "for all seasons", one whose fate can clarify much that is in ourselves and in our lives. As Eidelman puts it, a

historian needs to turn to, to consult with Pushkin from time to time.

Indeed, and not only to Pushkin the historian, that is, to his opinions on history which may be gleaned from his articles, letters, prose writings, poems and plays; but to Pushkin "in general", simply to Pushkin, to the inexhaustible mystery of his personality and his fate. This, perhaps, is no less important, if not more so, than the mere accumulation of facts about his life. For a historical moment is verified by the spirit of historical inquiry, as algebra, by the criterion of harmony.

St. Rassadin

V. В. ГРИНИН, А. Б. ЛАДЫГИНА. *Искусство: диалектика преемственности*. Минск, Издательство БГУ им. В. И. Ленина, 1979, 216 стр.

V. V. GRININ, A. B. LADYGINA, *Art: the Dialectics of Continuity*, Minsk, Byelorussian University Press, 1979, 216 pp.

This is a comprehensive study of the fundamental categories of Marxist-Leninist aesthetics—art rooted in the people, class-oriented, partisan and topical. They are treated in their mutual relationships, interconnection, interdetermination and interinfluence, and not only in their static state, but above all in their dynamics. Furthermore, they are seen in the historical continuity of artistic culture. The problem of continuity (in the broadest sense) is in fact central to the study, which reveals the dialectics of the general human and class, the transient and the permanent, in the development of art.

There is a detailed survey of how the problem is treated in Soviet and in foreign studies. The authors explain the factors that go into the continuity of spiritual culture, its intimate link with material culture, classify the different types and forms of artistic continuity, define absolute and relative continuity, etc. Nor do they limit their examination to the traditional understanding of continuity as an expression of the relative independence of spiritual (including artistic) development, but trace the contact between artistic and material development, and disclose the complex intermediate links between spiritual culture (including the arts) and material culture.

The authors examine not only progressive continuity, but, more particularly, regressive continuity which enables them to reveal the historical roots of reactionary trends in artistic culture, particularly modern bourgeois art.

Examination of continuity factors helps the authors bring out not only the essence and interconnection of



the four fundamental elements of Marxist-Leninist aesthetics, but also convincingly show that scientific communism is the real inheritor of all the values created by world material and spiritual (including artistic) culture.

The book contains four chapters. The first examines continuity as a key category of the universal law of negation of the negation. In this context it surveys the general, interconnected questions of continuity in material, spiritual, and especially artistic, culture.

The study shows both the epistemological and the social foundations of continuity in the development of artistic culture, the linkage between the past, present and future in social development. It further shows continuity to be a general tendency which, despite seeming chaos, hews a way for itself as the sum total of individual artistic creativity.

The second and third chapters discuss concrete manifestations of continuity in artistic culture. Art's kinship with the people is shown as the aesthetic expression of its absolute continuity. Its class orientation and partisanship are aesthetic expressions of relative continuity in artistic culture, manifested within the framework of class society (relative continuity can be progressive or regressive).

The authors make a number of interesting points concerning the roots of art in the people as the manifestation of complex, stable and unstable contacts between professional and folk art. They also draw attention to some new problems posed by recent creative activity and criticism (for instance, in the interpretation of the relation between the national and supra-national, the international and national, and also

the interaction of modern professional and folk art).

The approach to the problem of partisanship is interesting in the way it treats such concepts as "tendentious", "class", "partisan", and analyses the dependency of relative continuity on the character of its partisanship. Another interesting feature is examination of the reasons for the different attitude of classes to the artistic heritage.

The fourth, concluding, chapter deals with the topicality of art as the underlying condition of its very existence, and as the embodiment of tradition and innovation. The topicality of art is the final link in the process of the historical continuity of art, seen in the context of the intricate dialectics of types and forms of continuity. It determines the purpose and meaning of the age-long process of continuity, discloses its ultimate results and the prospects for the future, the dialectics of socialist artistic culture growing over into communist culture.

All in all, the book provides an integrated study of continuity in art, and sheds light on the chief methodological categories of Marxist-Leninist aesthetics, enabling one to study them as a definite system. All this justifies the view that the authors have made a contribution to the development of aesthetics. Another characteristic feature of their study is its organic unity of philosophico-aesthetic generalisations and art criticism.

The merit of this book lies in the fact that it raises and solves, at sufficiently high ideological and scholarly level, theoretical problems posed by the present stage in the development of socialist artistic culture.

V. Kairyan



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*From the Editors:* Below is a list of major works by associates of the Institute of the State and Law of the USSR Academy of Sciences, published mainly in the last three years and compiled by E. Kamenetskaya, Cand. Sc. (Law), of the Institute.

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## CONTRIBUTORS TO THIS ISSUE

- A. ALEXANDROV**, Academician, President of the USSR Academy of Sciences, Director of the Kurchatov Atomic Energy Institute, head of research in atomic science and technology. Author of the monographs: *The Structure of Atomic Power Engineering Besides Electricity; Science in the Land of Emancipated Labour; Scientific and Technological Progress and Atomic Power Engineering*, and other works.
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- D. BELYAEV**, Academician, Deputy Chairman of the Siberian Division of the USSR Academy of Sciences, Director of the Institute of Cytology and Genetics, Siberian Division, USSR Academy of Sciences. Main works are in the field of general biology, genetics, the theory of the evolution and selection of animals. He has elaborated the genetic principles of the selection of fur-bearing animals and the idea of destabilising selection.
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- P. IGNATOVSKY**, D.Sc.(Econ.), Editor-in-Chief of the *Planovoye khozyaistvo* journal. Author of works on the political economy of socialism, the agrarian policy of the CPSU, including *Economic Questions of the Theory and Practice of Socialism (an Analysis of Latest Experience)* and *Developed Socialism: Its Socio-Economic Dynamics*.
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- A. ARBATOV**, Cand.Sc.(Hist.), an associate of the Institute of the World Economy and International Relations, USSR Academy of Sciences. Specialist in Soviet-American relations, military detente and disarmament. Author of several papers, including *Security in the Nuclear Age and Washington's Policy*.
- Yu. SHERKOVIN**, D.Sc.(Psychol.), Professor of the Department of Journalism, Moscow State University. Author of the monographs *Social Psychology* (in co-authorship) and *Psychological Aspects of Mass Information Processes*.
- E. FYODOROV**, Academician, Director of the Institute of Applied Geophysics, Deputy Chairman of the Scientific Council for Peace and Disarmament Studies under the USSR AS, the State Committee for Science and Technology and the Soviet Peace Committee, and Chairman of the latter Committee. Author of many works in geophysics and on the interaction between society and nature.
- V. SHUBKIN**, D.Sc.(Philos.), Department Head at the Institute of the International Working-Class Movement, USSR Academy of Sciences, author of the works: *Sociological Experiments*, *The Beginning of Independent Life (Problems of Youth as Reflected in Sociology and Literature)*, and other writings.
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## OUR GLOSSARY

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THE SOCIALIST SYSTEM OF THE WORLD ECONOMY (SSWE) is a sum total of the national economic complexes of the socialist countries closely connected by the international socialist division of labour (see *Social Sciences*, No. 4, 1981), the cooperation and specialisation of production, and allround economic, scientific and technical collaboration, particularly within the framework of the Council for Mutual Economic Assistance, and a ramified network of commodity-money relations (trade, payments, credits, etc.).

The SSWE is based on the community of the socio-economic systems of socialist countries and the domination there of public ownership of the means of production. The SSWE is distinguished by a new type of interstate economic relations based on full equality, national independence, sovereignty, fraternal assistance and cooperation, and an organic combination of the interests of each country with those of the whole socialist community. These relations exclude exploitation and competition. As Marx wrote, "for the peoples to be able to unite, they must have common interests. And in order that their interests may become common, the existing property relations must be done away with, for these property relations involve the exploitation of some nations by others... The victory of the proletariat over the bourgeoisie is, at the same time, victory over the national and industrial conflicts which today range the peoples of various countries against one another in hostility and enmity" (K. Marx, F. Engels, *Collected Works*, Vol. 6, Moscow, 1976, p. 388).

The material requisites for the formation of the SSWE are conditioned by the objective laws of historical development, the public character of modern large-scale production and the existing level of the productive forces. They emerge within the framework of the capitalist system of the world economy and find their expression

in the internationalisation of economic relations. Lenin pointed out that "there is a tendency towards the creation of a single world economy, regulated by the proletariat of all nations as an integral whole... This tendency has already revealed itself quite clearly under capitalism and is bound to be further developed and consummated under socialism" (V. I. Lenin, *Collected Works*, Moscow, Vol. 31, p. 147).

In contrast to the world system of the capitalist economy where the law of uneven economic and political development is operating, the SSWE is characterised by the evening up (drawing closer) of the economic development levels of its member countries. Relying on the unselfish assistance and cooperation of other socialist countries, the countries economically backward in the past can now rapidly raise their economies to the level of more advanced states. The SSWE is distinguished by stability and high growth rates. At present it is the most dynamic economic force in the world.

DIALECTICAL MATERIALISM (DM) is a scientific philosophical outlook, a component part of the Marxist-Leninist theory, its cognitive, philosophical foundation. DM was created by Marx and Engels and developed by Lenin and other Marxists. DM emerged in the 1840s and advanced along with the progress of science and the revolutionary working-class movement.

The two basic trends of preceding philosophical development merged in DM and were synthesised by it on the basis of a scientific critical analysis and the principle of continuity: the trend of materialistic philosophy and the trend of a dialectical view of the world. The materialistic view of the world was not rejected by earlier philosophical thought. However, the theories of these materialists had a very essential shortcoming: they were metaphysical, mechanistic, combining materialism in comprehending and explaining nature with idealism in understanding and explaining social phenomena. Philosophers developing a dialectical view of the world in the new epoch were mainly idealists, like Hegel, for example. Marx and Engels did not simply borrow the theory of earlier materialists and the dialectics of idealists and synthesise them. On the basis of the successes of natural science and the entire experience of mankind, they proved that materialism could be scientific and fully consistent only if it became dialectical, while dialectic could become genuinely scientific only if it was materialistic.

DM came into being as a philosophical synthesis encompassing, by a uniform comprehension, the entire complex range of the phenomena of nature, society and thinking. DM organically combines a philosophical method of explaining and analysing reality with the idea of its revolutionary transformation. The latter is one of the most essential characteristic features of DM in distinction from earlier

philosophy which confined itself mostly to explaining the world. Here the class roots of Marxist philosophy were reflected as the most revolutionary outlook of the working class called upon to change the social system founded on the exploitation of man by man and build a communist, classless society in its place.

The subject of DM is formed by the most general laws of the development of nature, society and thinking, those common foundations of the objective world and its reflection in human consciousness which provide an adequate, scientific approach to phenomena and processes and a method of cognition, explaining and practical transformation of reality. DM is firmly opposed to all and sundry ideas about the supernatural. Nature develops, reaching its highest forms, including life and thinking matter, not from a "beyond" force, but by its inner laws and reasons. The corner stone of DM is the theory about the material nature of the world, that there is nothing in the world besides matter and the laws of its movement and change.

DM made a principally new step in the theory of knowledge. According to Lenin, materialist dialectic is a theory and logic of knowledge. DM created a firm foundation under the theory of knowledge and included practice in it. "All mysteries which mislead theory to mysticism find their rational solution in human practice and in the comprehension of this practice" (K. Marx and F. Engels, *Selected Works*, Vol. 1, Moscow, 1969, p. 15). Having applied the dialectic theory of development to knowledge, DM established a historical character of human concepts, disclosed interconnection between the relative and the absolute in scientific truths and elaborated the question about the objective logic of the movement of knowledge. DM is a developing science, it is not a dogma, but a guide to action.



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