ISSN 0134 – 5486

SOCIAL SCIENCES

2

1980

USSR ACADEMY OF SCIENCES

A quarterly of the Section
of the Social Sciences,
USSR Academy of Sciences.
Founded in 1970.
Published in Moscow in English,
and also in French, Sciences Sociales;
in German, Gesselschaftswissenschaften;
in Spanish, Ciencias Sociales;
and in Portuguese, Ciências Sociais

The journal is published by agreement:

in Bengali,
Samaj Bijnan (Bingsha Shatabdi Publishers,
Calcutta, India);

in Japanese,
Shakai Kagaku (Shakai Kagaku Co.,
Tokyo, Japan)

in Greek,
Kinonikes epistemes (Planet Publishers, Athens,
Greece);

in Arabic,
Al Ulum al-Ijtima'iya (Dar al-Farabi Publishers,
Beirut, Lebanon);

in Portuguese,
("Avante!" Publishers, Lisbon, put out
the edition for circulation in Portugal).

The Spanish edition is reprinted in Colombia
by Centro de Estudios e
Investigaciones Sociales (CEIS) Publishers, Bogota.

*

Since 1976 the Editorial Board has been
publishing the journal **Obshchestvennie nauki**
(Social Sciences) in Russian. It appears six times a year.

For subscriptions apply
to national distributors dealing with
V/O "Mezhdunarodnaya Kniga"
that are listed at the end of this issue.

"Social Sciences" Editorial Office, 33/12 Arbat, Moscow 121002, USSR.

USSR ACADEMY OF SCIENCES

Philosophy
History
Economics
Politics
Sociology
Law
Philology
Psychology
Ethnography
Archaeology

SOCIAL SCIENCES

Vol. XI, No. 2 1980

CONTENTS

To the Reader

This May will mark the 35th anniversary of the victory over fascist Germany. The lessons of this victory are ever in the focus of attention of broad sections of the public.

We publish in this connection an article by **G. Sredin,** *a noted Soviet military leader, concerning Volume 10 of the fundamental work by Soviet historians,* **History of the Second World War,** *which retraces the major political and military events of 1945.*

Physical culture and sport have become one of the most widespread mass movements of our time. In the Soviet Union great importance is attached to sport, millions of people are drawn into its orbit. This summer Moscow will host the 22nd Olympics, an event of international significance, notes **I. Novikov**, *Deputy Chairman of the USSR Council of Ministers and Chairman of the 1980 Olympic Games Organising Committee, in the interview that opens this issue of the journal.*

Sport and Society

Today the cultural progress of society is inconceivable without progress in physical culture and sport. **S. Pavlov**, *Chairman of the Committee for Physical Culture and Sport under the USSR Council of Ministers, underlines that the foundations of mature socialism are the source of the Soviet achievements in this field.* **L. Matveyev** *surveys the trend towards evolving a comprehensive sport theory and the structure of the scientific branches taking shape in this sphere.* **V. Stolyarov**'s *article treats of physical culture as a special sphere of human activity and its impact on various aspects of public life.* **O. Milshtein** *in his sociological survey cites data showing how sport helps to mould the personality. The content and principles underlying the process of the physical education of the individual at an early age are analysed by* **A. Chesnokov.**

Philosophy

One of the most sharply debated themes in philosophy today, says Corresponding Member of the USSR Academy of Sciences **I. Frolov**, *is that of how contemporary biology data correlate with the social conditions of man's existence. Socio-philosophical problems of "man-machine" systems were the theme of a round-table discussion in which specialists in philosophy, linguistics, logic, psychology, sociology and economics participated (the issue carries an abridged version of the stenographic report of the discussion).* **M. Mamardashvili** *scrutinises the correlation between man's ability to master scientific knowledge and reproduce it in a historically definite culture. In his essay* **Yu. Kagramanov** *exposes the social stand of the French "new philosophers".*

History

T. Golubtsova, *Deputy Minister of Culture of the USSR, writes about the role of historical museums as the custodians and disseminators of historical experience and progressive traditions.*

Economics

V. Sheinis *discusses the importance of evolving a classification scheme of the developing countries that would most adequately reflect the main trends of their differentiation. The concept of "state sector", its socio-economic character as an economic structure, the possible ways of its development and effect on the political superstructure are analysed by* **G. Smirnov.**

Political Sciences

The post-Helsinki period, we read in an article by **V. Gantman,** *has confirmed that detente is requisite to any constructive approach to solution of the crucial problems of world politics.*

Linguistics

We publish a report by Corresponding Member of the USSR Academy of Sciences **V. Yartseva**, *delivered at a meeting of the Presidium of the USSR Academy of Sciences on principles of classification which would allow for encompassing all the languages of our planet in a linguistic encyclopaedia* **The Languages of the World.**

Psychology

Corresponding Member of the USSR Academy of Sciences **B. Lomov** *devotes his article to the current aspects of space psychology, for the increasingly complicated programme of space research calls for the dynamic development of this new trend in psychological science.*

Ethnography

A. Kutsenkov *discusses the evolution of castes in Indian society as historically transient groups whose existence depends on the surviving forms of relations of production and on the national cultural traditions. Drawing on a wealth of factual material,* **V. Kabo** *examines the actual and not illusory interrelation of primitive society and nature.*

As usual, the issue carries extensive information on international and national forums devoted to various branches of the social sciences, as well as bibliographical materials, including an annotated list of the latest American studies by Soviet scholars.

The Editors

The World's Most Popular Movement

IGNATY NOVIKOV

From the Editors: Below we publish an interview kindly given to us by Ignaty Novikov, Deputy Chairman of the USSR Council of Ministers and Chairman of the Organising Committee of the 1980 Olympic Games in Moscow, in connection with the preparation for the event.

Question: The 22nd Olympic Games have aroused keen interest among fans, sport and public organisations and business quarters in all continents. Our readers would like to know more about the preparations being made for the Games.

Answer: The modern Olympic Games, which are held once every four years, are the greatest international contests in sports. For the first time a socialist country will be the scene of the Olympics.

Thorough and manifold preparations have to be made involving many ministries, government departments, and public organisations. "The Soviet Union has always supported, and will continue to support the modern Olympic movement," said Leonid Brezhnev, General Secretary of the CPSU Central Committee, Chairman of the Presidium of the Supreme Soviet of the USSR, in his Message of Greetings to the International Olympic Committee, to the Organising Committee and to participants in the 1976 Olympic Games in Montreal. Soviet people are now actively preparing for the 1980 Games; they will do their utmost for them to be held on a high level and to give fresh impetus to the noble ideas of friendship and peace.

Preparations for the Games are being carried out in a number of important areas. For example, work has been completed on the

construction and modernisation of 99 Olympic sites. Many of them are unique in design and architecture. Moscow has built Europe's largest roofed stadium for 45,000 spectators, a pool for swimming and diving, gyms, a hippodrome, a cycle-racing track and many other sport facilities.

In a picturesque area of Moscow a new district has sprung up which will serve as the Olympic Village. It has eighteen 16-storey apartment houses, an administrative building, a recreation centre, a restaurant, cafes, a department store—in a word, everything that the athletes will need during their stay here. According to Lord Killanin, President of the International Olympic Committee, our Olympic Village will be the best ever built in the history of the Games. This opinion is shared by many prominent sportsmen.

The building of hotels, hostels, trading and catering establishments, transport and communication facilities is nearing completion. Among them are a new complex of hotels in Izmailovo with accomodation for 10,000 people, the Sheremetyevo-2 airport, and sophisticated systems for television and radio broadcasting, international communication and Games control.

A sailing centre, the world's largest, has been built in Tallinn on the Baltic Sea, where the Olympic regatta will take place. In Leningrad, Kiev and Minsk, where preliminary matches for the football (soccer) tournament will be held, the stadiums have been modernised. A distinctive feature of our Olympic projects is that they are all dovetailed with our economic development plans and will be put to efficient use when the Games are over, so as to further improve the living, working and recreational conditions of Soviet people.

An important event in the course of the Olympic preparations was the summer 1979 Finals of the Seventh USSR National Games in which 2,300 athletes from 84 countries also contested. Many sport installations completed ahead of schedule were tested during the games. They include the Big and Small Sport Arenas, the Palace of Sports, the Druzhba Swimming Pool and the gymnasium at the Lenin Central Stadium in Luzhniki, the rowing canal, cycling ring and archery fields in Krylatskoye, the sports complex of the Central Army Sport Club in Leningradsky Prospekt, and the Dynamo Shooting-Range in Mytishchi near Moscow.

During the USSR National Games the Olympic installations for television, radio broadcasting and communication, and the automated information system were partially put into operation and placed at the service of journalists, officials, guests and spectators. So the National Games offered ample opportunity to check our preparedness for the 1980 Olympics.

Q.: To what other important aspects of the preparations for the 22nd Olympic Games would you like to call the attention of our readers?

A.: There are several such aspects. First, to the organisation of Olympic tournaments. As is well known, the Moscow Olympic Games will be held from July 19 to August 3, 1980. The Organising Committee, in close cooperation with the International Olympic Committee and international sport federations, has worked out the contest programme for the 22nd Olympic Games and the rules for conducting Olympic contests in 21 summer sports and 203 events (five more than in the Games in Montreal).

A great deal has been done to fit out the Olympic installations with up-to-date sport equipment, and apparatus (including electronic information boards) for referees and the news media. The bulk of these technical facilities has been made in the Soviet Union and other countries of the socialist community. Referees and their assistants have been trained for the Olympics, and a reliable system for doping-control is being developed.

The Organising Committee has paid great attention to the creation of the most favourable conditions for the work of representatives of the press, radio and television who will cover the Olympics. In all, 7,800 newsmen will be accredited. The main press-centre with the latest means of telecommunication and subsidiary press-centres on the sport arenas will be placed at their disposal; 1,280 places are being equipped for sportcasters there. This is twice the number that was available at the Montreal Olympics. Workers of the "electronic press" will also do their job at the Moscow new radio and TV complex, which will enable Olympic commentaries to be transmitted to all continents through 20 television and 100 radio channels. With the help of cable and radio relay lines, and artificial earth satellites more than 2,000 million people will be able to watch the Games simultaneously.

Preparations have already been made for carrying the Olympic torch across the territory of Greece, Bulgaria, Rumania, the Moldavian SSR, the Ukrainian SSR and the Russian Federation, and also for the opening ceremony of the Olympic Games in Moscow.

All facilities have been provided for accommodating members of the "Olympic family"—sportsmen, coaches, referees, IOC members, leaders of international sport federations and national Olympic committees, other Olympic officials and spectators.

An interesting programme of entertainment is being prepared to acquaint our guests with the art of the peoples of the USSR. The servicing staff will be reinforced by 150,000 people, mostly Soviet students, including 10,500 guides speaking various languages. Preparations for the Games in all areas have entered their concluding stage.

Q.: Could you say a few words about the international contacts of the Organising Committee? What, in your opinion, is the role of sport in promoting mutual understanding among nations?

A.: The Organising Committee has established close ties with the International Olympic Committee, international sport federations, national Olympic committees, and many sport organisations in developing countries with the aim of ensuring the most representative participation of sportsmen from all continents.

The majority of national Olympic committees recognised by the IOC have confirmed their intention to participate in the 22nd Olympics. We know that the IOC is considering requests to recognise newly-formed national Olympic committees in a number of Asian, African and Latin American countries. Soviet people will be glad to welcome the Olympic debut of these countries.

Sport enjoys immense popularity. International tournaments, especially at so high a level, have a worldwide audience. The social significance of such tournaments is enormous. In his Message of Greetings to the contestants and spectators of the Seventh USSR National Games Leonid Brezhnev said: "Sport brings people closer together and helps nations better to understand one another. May the ideals of brotherhood, friendship and mutual understanding, by which the Olympic movement is guided, always determine the atmosphere in which sportsmen from different countries meet."

We hope that the 22nd Olympic Games will really become a worldwide sport festival where the world's best athletes will demonstrate their skills and will to win. We hope they will mark yet another important step along the path of realising the lofty ideas of the international Olympic movement, one of the most popular and humane movements of our time.

Physical Culture and Sports in Socialist Society

SERGEY PAVLOV

It is no exaggeration to say that the cultural progress of society in our time is unthinkable without the progress of physical culture and sports. The Soviet Union has reason to be proud of its achievements in this sphere. Accelerated progress of physical culture and sports is inherent in the very foundations of mature socialism. The founders of the scientific theory of social development predicted that only a society based on communist ideas would be able to give each person the opportunity to harmoniously develop and apply his or her abilities.[1] In a system of guarantees of such a development of a person, granted by real socialism, an important place is held by a well-developed physical culture and sports movement. Physical culture and sports have become part and parcel of the system of upbringing and education, the everyday life of the people, scientific organisation of labour and the structure of the entire socialist way of life.

* * *

The creation of a unified system of physical education has become a signal achievement of developed socialist society in the sphere of physical culture and sports. This system of a new, progressive type plays an important role in the optimisation of the entire physical culture and sports movement in our society.[2]

The most essential features of this system are determined, primarily, by the fact that it emerged and has been developing as an integral part of the entire communist education system, which

embodies the humane aims and principles of the moulding of the new man, who would harmoniously combine spiritual wealth, lofty moral qualities and physical fitness. This finds expression in all major characteristic features of the Soviet system of physical education: in its structural, ideological and programmatic standards, content and organisation.

The principle of the allround development of the individual is realised in this system in conjunction with the principle of ensuring an organic connection between education, labour and other important aspects of social activity. The all-Union physical culture and sports complex "Ready for Labour and Defence" provides the basis for this. It came into being as the first attempt to evolve a single form of the state and public practice of physical education in accordance with clear-cut standards and requirements worked out for adolescents and young men and women. During almost 50 years of its existence the complex, in an improved form, has become a key instrument in the development of the mass physical culture and sports movement. Thanks to this complex many millions of Soviet men and women have been drawn into sport activities. In 1972, the Central Committee of the CPSU and the USSR Council of Ministers examined and approved a new complex designed for all basic age groups of the population. During the period between 1972 and 1978, more than 120 million Soviet men and women passed the new standards tests. The progressive nature and usefulness of these standards have been confirmed by the achievements of physical education systems in a number of socialist countries where Soviet experience has been widely used.

Foreign critics of the Soviet system of physical education often claim that it has a utilitarian character, and argue that the system is aimed at preparing young people for labour, which, they contend, runs counter to a free development of the individual. Such claims are based either on obvious distortions of truth or on a misunderstanding of the essence of the matter. Labour has always been, and remains, a fundamental condition of human progress. At a definite stage of social progress, when the narrow division of labour engendered by the capitalist mode of production disappears, it is in the sphere of labour that the objective requirement in the allround development of working people arises. Socialist production radically changes the position and functions of man in the process of labour and poses the task "to educate and school people, give them *allround development and allround training*, so that they *are able to do everything*".[3] We have no contradiction between the tasks of preparing for labour and the interests of the allround development of the individual, including the sphere of physical education.

In this connection we should point out certain faults and misapprehensions of the so-called compensation theory which is rather widespread in the Western sociology of physical culture and sports. According to that theory, the principal and only function of physical education in modern society lies in compensating hypodynamics (insufficient motor activity) and thereby reducing the harm being done to man by mechanisation, urbanisation and modern civilisation as a whole. Adherents of this concept ignore the fact that the aftermath of industrial civilisation largely depends on concrete socio-economic conditions and shift responsibility for the negative aspects of civilisation on some soulless factors and create an illusion that it is easy to combat them by means of physical culture and sports. Unquestionably, the danger of hypodynamics has considerably increased in our age. At the same time, the scientific and technological revolution in socialist society has brought an increase in leisure time, which Marx called a space of human development, and which can be largely used for the allround advancement of human qualities and abilities and the mastering of values of spiritual and physical culture, thus increasing man's creative and vital strength.

The Soviet system of physical education envisages full optimisation of the physical development of the individual, the broadening, on this basis, of the functional reserves of the organism, and an increase in its resistance to unfavourable influences. Of primary importance in this connection are sanitation measures taken in the process of physical education, which is ensured, among other things, by a strict choice of means and methods according to the criterion of the greatest health benefits, scientifically substantiated regulation of physical loads in the interests of health building and obligatory and consistent medical and pedagogical control. It is essential that the sanitation principle in physical education has not only a prophylactic meaning (to prevent illnesses) but also the purpose of building health and increasing strength. In other words, it maps out the path to health which lies in a constant increase in the level of man's capabilities.

Along with the above-mentioned features, the system of physical education in developed socialist society is characterised by a genuine unity of state and public forms of organisation. The basic state form is compulsory physical education in all educational establishments and some other institutions, and the public form is voluntary sports societies. Irrespective of organisational forms, the entire social practice of physical education pursues similar aims, is based on uniform ideas and scientific, methodological and programmatic standards and improves in the conditions of day-to-day interaction of public and state organisations carrying on this work.

A major social factor that determined the rapid formation and successful functioning of the Soviet system of physical education is the effective participation of the leading force of Soviet society and the state—the Communist Party—in solving problems of education and culture. Thanks to the consistent implementation of the CPSU general course aimed at ensuring "*full* well-being and free, *allround* development for *all* the members of society",[4] more favourable conditions are being created for improving the system of physical education and developing the mass sports movement. The Soviet society of developed socialism was the first in history to constitutionally guarantee each person a real opportunity of harmonious development and health protection, including by means of physical culture and sports.[5]

These guarantees are ensured by the facts that:

— a mass physical culture and sports movement has developed in the country, embracing about 80 million people;

— physical culture and sports are included in state programmes and curricula of all educational establishments, in compulsory vocational training, in the system of scientific organisation of labour, and also in the system of prophylactic and other health protection measures being implemented by state institutions; more than 80 million people are covered by the state system of physical education and special physical training, the bill being footed entirely by the state (salary of instructors, purchase of equipment, etc.);

— the number of full-time instructors and experts in physical culture and sports has exceeded 300,000. They are trained in more than 220 higher and specialised secondary schools; besides, about six million voluntary instructors and coaches and over five million referees help to rationally organise physical culture and sports activities;

— the state maintains a medical sports service (including a network of specialised dispensaries and medical centres), where all sportsmen are examined, receive free consultations, etc.;

— the state, trade union and other funds earmarked for health protection, physical culture and sport are constantly growing: over the past decade alone, annual state allocations for these purposes have increased from seven to 13 thousand million rubles;

— the physical culture and sports movement has a powerful material basis: at present there are more than 700,000 specialised facilities, including over 66,000 gymnasiums, about 3,300 big stadiums, 1,500 indoor swimming pools, etc.

Functioning and developing under favourable conditions, the system of physical education is constantly improving and is connected ever more closely with the physical culture and sports movement, including unorganised sports. The unorganised sports

movement is becoming more and more organised and acquiring a scientific basis. However, this does not mean that the strictly organised system of physical education becomes the only form of the purposeful use of physical culture and sports in society.

Despite the successes of the physical culture and sports movement in the USSR, there are nevertheless problems that have to be solved. Some of these problems will be dealt with below, while analysing the development trends of individual links in the physical education system, the mass forms of physical culture and the high-performance sport.

* * *

Physical education, as the basic form of the purposeful use of physical culture in society, has become, from the very inception of the Soviet educational system, an integral part of that system. Back in the 1920s, physical culture was introduced as a compulsory subject in general educational schools. At present, more than 70 million children and young men and women are taking a compulsory course of physical education: among them pupils of pre-school establishments, schoolchildren, students of vocational and special secondary technical schools, as well as institutes of higher learning. More than 125,000 full-time teachers and instructors give them systematic training according to programmes having a systems basis. Parallel with it, there are other forms of organisation of young athletes. In general educational schools alone, about 100,000 physical culture groups are functioning, embracing more than 19 million children; almost two million budding athletes are attending children's and youth sports schools.

Along with achievements in this field there are several unresolved problems. The basic ones among them are those connected with the working out, on a scientific basis, of models and criteria of *physical perfection* as an attribute of a harmoniously developed man; specification of the concrete essence and principles of the process of physical education at all major stages of human development, especially in childhood and youth, when the basis of physical development is formed. In defining the aim of a physical education system, it should be remembered that the purpose of moulding a physically perfect individual has a concrete historical character. Its content and criteria change, depending on changes in the basic living conditions and man's activity in society.

As is known, the conditions of physical development of man change radically as a result of the scientific and technological revolution and ever greater changes in the environment. This poses new demands on the physical education system which is

called upon, above all, to ensure the optimum physical development of the rising generation and thoroughly prepare them for activity in new conditions. Accordingly, experts in this field are faced with complicated tasks of a fundamental and applied nature, whose accomplishment should ultimately raise the level of physical education. The social significance and complexity of these tasks require that not only specialists in physical education, but also sociologists, anthropologists and experts in other fields should concentrate their efforts on accomplishing them.

One of the most urgent problems is connected with the insufficient volume of purposeful motor activity in the life of children and young people today. According to data, the time allotted to physical exercises should comprise, during the period of the most intensive formation of the organism, no less than 10 to 15 hours a week. In actual fact, schoolchildren and students now spend much less time on physical exercises, which can be explained, among other things, by the continually growing amount of time spent on classroom studies and at home to cope with the constantly increasing flow of information. This disproportion clearly has negative consequences. It has been established during examinations conducted by the Institute of Children's and Adolescents' Hygiene, under the USSR Ministry of Public Health, that a certain percentage of schoolchildren develop some morpho-functional deviations, including changes in carriage, excess weight, initial forms of hypertension, etc. These alarming signals are primarily caused by hypodynamics, and cannot be charged to the acceleration of development or other reasons.

There are two ways of increasing the volume of directed motor activity of students: more time devoted to physical education in school curricula (including all grades of general and higher school), and better and more intensive introduction of physical culture and sports in extracurricular activities. Some educators object to the first, claiming that many school subjects should be expanded and studied more thoroughly at the expense of physical education. Such arguments cannot be considered valid. For physical education is of *special* significance for preserving and strengthening the health of the rising generation—the greatest asset of society. Physical education plays a role of prime importance in practical labour education and the formation of an active attitude to life among young people. Also of importance is the fact that compulsory physical education in school raises the general capacity of work of school pupils, and thus helps, as it were, towards the study of other subjects. Physical education lessons not only take time, but also save it by creating a favourable background for practically all studies at class. This makes it expedient to increase the proportion of physical education in the

general school curriculum. Naturally, physical culture and sports should be more intensively introduced in extracurricular activity.

Serious attention should be given, in our opinion, to suggestions for optimising the general regimen of the school's work from the point of view of its health-building value. It is proposed, among other things, to introduce a long, approximately 90-minute break for performing physical exercises of various types (a kind of daily additional physical culture lesson); similar lessons should be arranged during the extended-day school programme; there should be weekly lessons on certain subjects held outdoors, thus utilising its health-giving effect; school holidays should be more frequent (let each of them be comparatively short), and they should be rationally used in the interests of sound physical development and improvement of health. Some of these proposals have already been reflected in the joint measures undertaken by the Ministry of Education, the Committee on Physical Culture and Sports under the USSR Council of Ministers and voluntary physical culture and sports societies, on further improvement of the system of the physical education of students, development of independent forms of their physical culture and sports activities and a closer connection between the curricular and extracurricular forms of physical culture and sports.

The family is also called upon to play a considerable role in raising the efficiency of the physical education system. This presupposes the creation of conditions necessary for an optimum organisation of physical education in the family including the physical education of parents (through people's universities of physical culture and sports, TV, radio and other channels), broad publication of various aids, increased production of portable equipment for physical training at home, an expansion of the network of house, communal and regional voluntary clubs of physical culture and sports, etc.

* * *

The main development trend of the mass sports movement in our country is its becoming a movement of the entire people. In the present programme of social development and raising of the people's living standards special attention is devoted to the need "to encourage mass-scale physical culture and sports at factories and offices, at educational institutions and in residential units".[6] We have in mind the further introduction of physical culture and sports in the sphere of work and the sphere of everyday life.

In the sphere of work, physical culture and sports have great economic significance, being a factor in raising labour productivity. But this is not the only function of physical culture at places of work. The introduction of physical culture at socialist production units has never pursued solely economic aims. It has the purpose of producing a health-protecting and educational effect. In other words, the functions of physical culture in conditions of socialist production lies in optimising, not only the very process of labour, but also its influence on the workers, as well as an improvement in their personalities.

At the first stages of the introduction of physical culture in the sphere of labour it was mainly in the form of the so-called production "daily dozen", performed before the beginning of work and during special intervals. This kind of exercises became quite widespread back in the 1930s. At present about 24 million people in this country do various kinds of physical exercises at their places of work. Even with certain shortcomings now existing in this form of physical culture one can speak of its considerable social value both in economic and health-building aspects. Data reveal that the economic effect of the introduction of physical culture at places of work is expressed not in fractions of per cent but in several per cent of the increase in labour productivity, and at the same time the number of days off from work due to illness often decreases by a factor of 5 and more.

We see prospects for the development of physical culture at places of work in the further enrichment of its content and improvement in the means and methods of introducing it in the scientific organisation of labour at each enterprise and institution. It should be borne in mind that there is no type of labour that would not require (even indirectly) optimisation by means of physical culture. This becomes evident if one takes into account the fact that the success of any labour activity and its impact on the worker, directly or indirectly, depend on the general level of the functional possibilities of the organism and the state of health, conditioned by the purposeful utilisation of physical culture. It is also necessary to consider that there still exist factors at currently operating enterprises (noise, vibration, monotony, etc.) that cause unfavourable functional deviations which are fraught with occupational diseases. Besides, a sharp drop in the share of muscular energy in the majority of labour processes contributes to the spread of hypodynamics with its potentially dangerous consequences for the human organism. That is why it is precisely physical culture that is called upon to neutralise the negative effect of hypodynamics, as well as some unfavourable working conditions.

The experience of introducing physical culture in the system of scientific organisation of labour has been accumulated at many socialist enterprises, especially at such big ones as the Uralmash works in Sverdlovsk, the Kirov plant in Leningrad, the Krasny

Kotelshchik works in Taganrog, the Elektrostal plant near Moscow, etc. In these places physical culture forms an organic part of the general culture of production and the entire system of measures aimed at optimising labour conditions, the indices of its development being planned and controlled as a major section of the general plan of the socio-economic development of an enterprise. As a result, the role of physical culture at an enterprise has considerably broadened and its forms and content have been enriched. It does not confine itself to traditional types of exercises at work place, but also includes special complexes of rehabilitation, prophylactic and correctional exercises used in combination with general hygienic, physio-therapeutic, psycho-hygienic and other means. It is connected ever more closely with regular physical culture and sports activity organised in leisure hours; with professional and applied physical training, with medical rehabilitative measures in plant preventoriums, rest homes, etc. This experience should be made widely popular and accessible; it should be improved along with the development of the production sphere of mature socialist society.

The development of physical culture at places of work also serves as a means of introducing it in the everyday life of working people. *Physical culture in everyday life* is increasingly becoming a major factor of health, optimum organisation of recreation, and a rational utilisation of leisure time in the interests of the harmonious development of the individual. A steady increase in the leisure time budget of the working people of this country (during the past 10-15 years, for example, it has grown by about 300-350 hours a year) is the first objective requisite contributing to this.

However, it should be admitted that the possibilities for the most rational use of physical culture and sports in the life of working people are not yet fully realised. The overwhelming majority of the mature and elderly population is not yet drawn into regular physical culture and sports activity, it occupies a very insignificant part in the structure of leisure time of many people. It is not accidental that out of every 100 people between 35 and 60 years of age only two or three persons can meet the standards of general physical fitness for their age group. Serious alarm is caused by widespread cardiovascular and other diseases, largely caused by the lack of exercise. This calls for a sharp increase in the share of physical culture and sports in the leisure time budget of working people and the creation of an entire complex of objective and subjective conditions necessary for physical culture and sports firmly entering each person's life.

The use of leisure time by the individual should not, of course, be regimented. Here, only methods of persuasion and educational

impact on the formation of tastes, inclinations and interests are possible. The concrete mechanism of such an impact in relation to physical culture and sports activity of the adult population has been studied insufficiently. Experience shows that demands made on physical culture in daily life by various groups of the population are diversified. While the greater part of middle-aged and elderly people prefer individual and non-strenuous physical training (exercises, jogging, etc.) or similar pursuits in small groups at their place of residence or at sport centres not far from home, most young people, on the contrary, prefer collective forms of sports activities, striving for broad and emotional contacts with their peers.

There are regional-demographic, national, professional and other distinctions that influence the attitude of these or other groups of the population to physical culture and sport. In our opinion, one of the primary tasks for the development of the mass physical culture and sports movement is to thoroughly examine the requirements and interests of the various groups of the population, take them into account and shape them in our organisational work aimed at the broad introduction of physical culture and sports in everyday life.

The degree to which the working people go in for physical culture and sports depends, of course, on many circumstances, and therefore it can substantially be raised only if we approach the problem in a comprehensive manner. There are many examples of such an approach on a district, regional and city scale in this country. The inhabitants of the city of Salavat, a new centre of the chemical industry in the Bashkirian Autonomous Soviet Socialist Republic (the Russian Federation) were among the first to join the movement for turning their city into a city of health. The enthusiasts began with thorough sociological investigations, the study of the interests of the basic groups of the population and detailed examination of the conditions for physical culture and sports training at places of residence, work, etc., in order to uncover the real possibilities for drawing the entire population of the city into physical culture and sports. On this basis and with the broad participation of the public, economic organisations and management bodies, a comprehensive five-year plan has been worked out for the development of physical culture and sports on a city-wide scale. This plan has, from the very beginning, been supported organisationally by the City Soviet of People's Deputies, which endorsed it as a programme for all city institutions, irrespective of their departmental affiliation, and supported it materially and financially by coordinating financial, building and other possibilities of municipal authorities, industrial enterprises, trade-union organisations, etc.

Now that the third five-year plan is being completed in Salavat, the results of this experiment can be seen. In all city districts and neighbourhoods there are now centres of physical culture and sports managed by activists from house committees, house managements and other organisations. They have sports grounds, gyms and other such facilities open to the population daily, and they are staffed with experienced instructors and coaches. Both traditional and new forms of physical culture work among the various groups of the population are practised (health-building groups at places of residence, so-called schools of health for young mothers, etc.). Along with that, at big industrial enterprises departments of physical culture and sports have been set up which are staffed by specialists, coaches, doctors and economists. On a city-wide scale mass physical culture and sports events are held regularly, such as a popular city cross-country skiing competition which lasts throughout the whole winter and in which entire families, house, neighbourhood, plant department and plant teams are taking part. Here, in the city of Salavat, the greatest opportunities provided by mature socialist society are being implemented for developing a genuinely popular physical culture and sports movement. The same can be said about several other cities, districts and whole regions.

* * *

Outstanding sports achievements draw special attention. They are a sort of yardstick of human potentialities realised in sports at each given stage of its development. These achievements reflect many aspects of the progress of physical culture, and, to some extent, the progress of society's culture as a whole. This partly explains the extreme popularity of sports: many millions of people follow sports events, such as the Olympic Games or world football championships, with the help of TV and radio.

Sports as a broad social movement in socialist society is characterised by unity between its mass nature and drive for ever higher achievements. With the development of sports a differentiation of its individual functions and the trends of the sports movement corresponding to them is going on. Thus one can clearly distinguish between basic (mass) sports reflecting the health-building and other general functions of physical culture, and the high-performance sport. Being closely connected, these aspects of one and the same social phenomenon are uniform in their essence, but at the same time have specific features. Sports activity within the framework of mass sports largely depends on the principal activity of a sportsman (studying or working), and,

therefore, the time he can spend on sports and the level of sports achievements are objectively limited the more time and energy are required by his principal activity. Whereas the high-performance sport oriented to the absolute maximum of results (including international-class achievements) demands ever greater expenditures of time and strength and becomes, to a certain degree, and for a specific period of the athlete's life, the basic form of his activity.

A comparatively small percentage of the total number of athletes are in the sphere of the high-performance sport. In this country they comprise approximately one per cent (all those who held a master's rating or show results of about that standard). Such a proportion seems quite natural. Society is not interested in an indefinite expansion of the number of sportsmen vying for the highest results. The range of important spheres of activity which attract people from the point of view of society's progress as a whole and the development of the individual abilities of its members, is boundless. A problem arises in this connection of an expedient regulation of transition channels from mass sport to the high-performance sport. It is not a question of making these channels narrower, but of discovering talented athletes and creating favourable conditions for their fuller development. It goes without saying that far from everyone has the requisite athletic abilities to ascend the pedestal of highest achievements, but each should be given an opportunity to become a participant in the mass sports movement.

The strategy of social management of the sports movement in the Soviet Union proceeds, primarily, from the premise which was formulated by L. I. Brezhnev in the following words: "Efforts must be continued to raise the international class of our sports. But the main thing is the mass character of the sports movement, the development of physical culture which embraces all young people..."[7] Its mass character is the fundamental feature of Soviet sports. And it determines the level of its achievements. Testimony to this is the stable trend of the accelerated growth of the absolute achievements of Soviet sportsmen, as well as those of athletes of other socialist countries, on the basis of the allround development of the mass sports movement. It is not accidental that since the Olympic Games in 1952, Soviet athletes have invariably been in the limelight of international sports. Of course, the level of the highest sports achievements of a country does not always reflect the development level of mass sports (they are indirectly connected through certain conditions), but there is a definite interdependence between them.

The high-performance sport plays the vanguard role as far as mass sports are concerned: the former blaze the trail for new

achievements, stimulate efforts to them and lend advanced experience to mass practices. In other words, this aspect of the sports movement fully reflects the role of sports as standard and heuristic-creative activity, expanding the visible horizons of human possibilities. Naturally, when this course is followed, sports activity becomes largely similar to very intensive creative labour.

In this connection, in international sports organisations and around them, the question is being debated of amateurism and professionalism in sports. Some figures in the world sports movement are trying to solve it in an abstract way, without analysing the principal specific features in the social status of athletes in different social conditions. However, the heart of the matter lies precisely in this. In socialist society, all conditions have been created for athletes to be able to harmoniously combine sports activities with general and special education, and with an active participation in production and other socially useful spheres. This removes the problem of the inevitability of professionalisation in sports.

It is indicative that in the USSR Olympic teams more than half of the athletes have a higher education, or study at higher educational establishments, about four per cent attend general and secondary specialised schools (this percentage tends to grow in view of participants in some sports becoming younger), and the rest are workers in various branches of industry, or office employees. During the period of intensive sports activity and after it, more than 80 per cent of the Olympic athletes become educated specialists. Many of the outstanding sportsmen of the past have earned candidate's or doctor's degrees, achieved impressive results in the theory and methodology of sports, pedagogics, medicine, biology, philosophy, and technical and other sciences.

The socialist sports movement is a part of the progressive world sports movement. This is only natural, because they are united by humanistic principles and human ethics. Athletes of the socialist countries have won universal recognition as the most consistent champions of peace, friendship and cooperation between all peoples of the world.

The 1980 Olympic Games will be held in a socialist country; this is the first time ever that the Games will take place in the socialist world, and this, we believe, marks a new stage of progress in international sports, not only as far as the level of achievements is concerned, but also, and above all, in the development of the noble ideas of Olympic movement. New forms of international cooperation in sports have evolved during the preparations for the Olympics in Moscow, including selfless assistance to athletes of countries needing help. Soviet sports organisations and institutes, for instance, render regular aid in training sportsmen and coaches

in the developing countries of Asia, Africa and Latin America. Special courses have been opened for them at the Moscow Institute of Physical Culture; special aids and methodological recommendations have been prepared; many of the best Soviet experts are being sent to these countries, etc. These initiatives in organising and preparing for the Olympic Games have been approved by the International Olympic Committee (IOC) and international sports federations.

At the same time, Olympics-80 is an event of special significance for the intensification of all sports activities in the Soviet Union. Our best athletes are busily preparing for the Games in order to uphold their Olympic prestige and demonstrate the progressive traits of Soviet sports. Apart from that, a pre-Olympic movement has sprung up throughout the country. Athletes, physical culture enthusiasts, young and old people, representatives of various trades and professions are eager to make their contribution to the preparation for the Olympics. Thus, the reserves of the development of the mass sports movement and improvement of the Soviet school of sports and the entire Soviet system of physical education are being brought into play.

The 1980 Olympic Games are a major event in the social life of our country. Soviet people, as consistent internationalists, are happy to promote the spirit of trust and mutual understanding between nations, and by their hospitality to make their contribution to an improvement in the international socio-political climate.

NOTES

[1] K. Marx, F. Engels, *The German Ideology*, Moscow, 1969, p. 322; K. Marx, *Capital*, Vol. 1, Moscow, 1969, p. 459; V. I. Lenin, *Collected Works*, Moscow, Vol. 6, p. 54.

[2] For more details see *The Soviet System of Physical Education*, Moscow, 1975; *Theory and Methods of Physical Education* (in two volumes), Moscow, 1976 (both in Russian).

[3] V. I. Lenin, *Collected Works*, Vol. 31, p. 50.

[4] Ibid., Vol. 6, p. 54.

[5] Articles 20, 24, 25, 41, 42 of the Constitution of the USSR.

[6] *Documents and Resolutions, 25th Congress of the CPSU*, Moscow, 1976, p. 112.

[7] L. I. Brezhnev, *Following Lenin's Course*, Moscow, 1972, p. 94.

The Formation of the General Theory of Physical Culture

LEV MATVEYEV

A purely empirical sphere some time ago—physical culture and sports—is now rapidly becoming a sphere of intensive application and "production" of scientific knowledge. Comparatively recently, the words "the science of physical culture" (or "the science of sports") could hardly be associated with something serious. Today, the serious nature of the scientific problems of physical culture and sports has been recognised by representatives of most diverse sciences. Testimony to this is the World Scientific Congress "Sports in Modern Society" held in Moscow at the end of 1974, which examined various problems in 21 panels, with the participation of more than 1,000 representatives of 45 countries—specialists in the humanities and natural sciences: philosophers, sociologists, historians, teachers, psychologists, biologists, doctors, and experts on the theory of physical culture and sports.[1]

The range of problems of the development of scientific knowledge about physical culture and sports includes questions about the basic trends of their formation, the structure of scientific branches being formed and their future. Answers to these questions are the subject of special scientific research. This article is part of that research. It attempts to briefly trace the logic of the formation of generalising knowledge in the sphere under examination and to outline some prospects for its development as a comprehensive theory.[2]

Prerequisites. Right up to recent decades the scientific and theoretical interpretation of physical culture and sports dealt mainly with individual aspects, and was often confined to the problems of physical education. This was due to several circumstances. Part of the social functions of physical culture and sports had not received, until some time ago, a sufficiently strong impulse for its development. It remained in a dormant state, as it were, and therefore could not become a subject of thorough and broad study. Physical education was the basic exception. From the very beginning, it was an important part of the general educational system and as such attracted researchers. In general, a greater scientific effort was concentrated on studying the various forms of physical culture and sports later than in many other fields of culture. This, and also an insufficient formulation of the theory of culture as a whole, was responsible for the comparatively later isolation of general theoretical aspects in the sphere under examination.[3]

The initial weakness of the research base made it necessary, while forming the rational foundations of physical culture and sports activity, to borrow materials from related sciences and scientific and applied knowledge (general physiology, anatomy, medicine, hygiene, pedagogics, etc.) that had evolved earlier. This has produced various consequences: on the one hand, many achievements of the related sciences have quite justifiably been included in the theory of physical culture and sports (especially in its prerequisite sections); and on the other, it has been found to contain quite a few "alien" fragments and constructions which were not organically connected with it.

The unusually rapid development of the physical culture and sports movement in our days, which has become one of the broadest social trends, has made imperative an accelerated advancement of special scientific knowledge which should thoroughly interpret this sphere of reality and serve as a guide for action. The high-performance sport was the strongest catalyst. With the development of Olympic and international sports movements, the orbit of sport began to draw large scientific-research resources, whose volume and quality continue to grow at a high rate. More and more researchers find in the high-performance sport a gigantic natural laboratory opening the road to the unexplored summits of human possibilities. Of course, it is not only sports that stimulated attention to the scientific aspects of physical culture. A notable role in this has been played by hypodynamics—this by-product of the technical progress and comfortable life of our time. An obvious connection between "motion hunger" and certain "diseases of the century" resulted in many people realising anew the vital role of active motion, especially in its optimum forms provided by physical culture. On the whole, the realisation of theoretical, scientific and applied problems of physical culture and sports has taken place on the basis of their growing social significance, including general

cultural, ideological, educational, health-building and other aspects.

The formation process of the theoretical foundations of physical culture and sports on a global scale has undoubtedly certain common features. At the same time it has certain distinctions in various social conditions. The development of the theory and practice of physical culture and sports in socialist society is ultimately conditioned by the requirements of the allround advancement of all members of society. The ideal of a harmonious development of the individual, which has for centuries been, as Marx put it, "but an ideal, a calling", receives its concrete content in a developed socialist society, and is being implemented on an ever greater scale, as required by the objective laws and needs of social progress. It is in these conditions that the physical culture and sports movement of a new type is being developed, assuming a universal character, which, in turn, stimulates the advancement of its theory.

On the complex of theoretical and scientific-applied disciplines formed in the sphere of physical culture and sports. By now, a rather large range of disciplines has been formed, reflecting, to a degree, the essence of phenomena, processes and relations in the sphere of physical culture and sports. Almost all of them have acquired an official status within the framework of professional training, having evolved as subjects (disciplines) in the curricula of the institutes of physical culture and other specialised educational institutions. These disciplines exist so far in a didactic-adapted form, which fact, naturally, hampers their strict scientific classification.

If we confine ourselves first to disciplines that have become traditional, to a certain degree, and place them in expressly dissimilar groups, there will be three clear-cut groupings:

1. Definite applied disciplines of specific character, which came into being, apparently, as a result of a direct reflection, from the sphere of physical culture and sports on the basis of the fact of individual types of physical culture and/or sports activity; among them are, for instance, the theory and methodology of gymnastics, track and field events, various games, swimming, etc.

2. Branch disciplines of a natural scientific and humanitarian character, whose genetic roots go into bordering sciences that have taken shape earlier, and which seem to be particular projections of the latter onto the aspects of physical culture and sports that correspond to their subject: these are, for instance, specialised branches of anatomy, physiology, biochemistry, biomechanics, medicine, psychology, etc.

3. Generalising special disciplines reflecting the general laws of physical education, as well as the general laws of the functioning

and development of physical culture and sports in society. Among the disciplines that have already taken shape there is, above all, the theory of physical education. Later, we shall dwell on other disciplines of this group, including broader ones that are still in the process of formation.

The first and third groups of disciplines, while differing from each other by the boundaries of their subjects and the degree of generalisation, are at the same time somewhat homogeneous. They have similar genetic roots, so to say. The initial point of their genesis is, apart from other things, direct applied knowledge that emerged in the sphere of physical culture and sports as a result of comprehension and interpretation of the phenomena, processes and laws typical of the given sphere of social practice. This does not mean that their emergence, let alone development, proceeded without any influence of related sciences (multilateral influences are well pronounced here). These groups of disciplines from the very beginning drew basic data from the sphere of their own subjects, and did not receive them ready-made by transferring knowledge formed on the basis of other material. In contrast to this, the disciplines of the second group initially took shape as a result of extrapolation of knowledge, principles and methods that have emerged in another sphere, to the sphere of physical culture and sports. It does not follow from this that the essence of the disciplines of the second group is reduced entirely to transferring material from the branches of science where they originated from. Developing conformably to the range of problems of physical culture and sports, the disciplines of the second group have gradually acquired their specific content. They largely borrow materials, aspects and methods typical of the sciences that gave birth to them. This can easily be seen by the example of corresponding disciplines being taught at the institutes of physical culture (let us note that for some of their specialised sections there are no names relevant enough, to date: for instance, "physiological foundations of physical culture and sports", "physiology of sports", "biochemistry of sports", "psychology of sports", etc.).

Already from this brief characteristic it can be seen that the structure of this complex of disciplines has been influenced by two trends inherent in the development process of scientific knowledge as a whole, namely, differentiation and integration. Differentiation has for a long time remained the prevailing trend. It was manifested in the emergence of a multitude of particular and one-aspect disciplines that are directly or indirectly related to individual aspects of physical culture and sports.[4] At present this trend is characterised by a further specialisation of knowledge, sometimes with a very fractional division in branches of sciences and subjects of study. What is new here is that, first, differentia-

tion is going on not only in traditional branches of science, but also in those that have taken shape comparatively recently (for example, the concrete sociological, scientific managerial and metrological aspects of the theory of physical culture and sports). Secondly, the division of knowledge by its "departmental affiliation" to one-aspect branches of science that have taken shape earlier gradually gives way to the formation of intersubject, "borderline" knowledge and comprehensive-problematic approaches (thus, within the framework of applied branches of the theory of physical culture and sports, the theory of sports capacity to work, and medico-pedagogical, psychological-sociological and other comprehensive knowledge which is not reduced just to physiological, psychological or other individual aspects, are formed). In other words, the dividing lines between branches of science that have taken shape earlier, less and less correspond to the logic of the formation of scientific-applied knowledge, and therefore they are being "violated" more and more often for the sake of solving concrete problems of a comprehensive character.

Along with this, the need is growing to consistently integrate special knowledge under the aegis of some generalising theory. The first attempts to formulate a sufficiently broad theoretical and practical discipline embracing the entire sphere of physical culture, were made somewhere around the 1920s. But they were not continued due to the reasons mentioned above.[5] Subsequently, with the entire complex of scientific materials on the problems of physical culture and sports becoming richer, more reliable prerequisites have been taking shape for substantial generalisations. The functions of the broadest generalisations, right up to most recent times, were being fulfilled mainly by the theory of physical education (or similar disciplines). However, it could not undertake the task of maximum generalisations in the entire sphere of physical culture and sports, without retreating from the inner logic of the elaboration of its own subject (included in the range of problems of physical education).

Here it should be noted that the theory of physical education, just as any other discipline, projected to a certain part of the object called "physical culture", cannot be identified with the theory of physical culture as a whole, all the more so with the general theory of physical culture and sports. The incorrect nature of such identification (this is sometimes done not only by laymen) becomes evident, when one compares, at least at the first approximation level, those realities to which the theory of physical culture and the theory of physical education are related. As is known, physical culture exists in various forms: it includes the sum total of valuable means and results of human activity specially oriented to optimising the physical development of man, increasing his natural vital forces and purposefully perfecting his physical build-up. Physical education as related to physical culture can by right be regarded as one of the most essential and widespread forms of the latter's existence, functioning, utilisation, etc. This form is characterised by the strictly regimented boundaries of the pedagogical process, where didactic and educational principles are implemented to the fullest extent possible. In other words, physical culture in this case is organically included in the system "education-upbringing" and is functioning according to the laws of this system. Other forms of goal-oriented utilisation of physical culture in society, having these or other features common with physical education, are characterised at the same time by their own specific features which should not be reduced just to physical education.

Thus, physical culture directly included in the sphere of production (the so-called "production physical culture") is functioning not only by the rules of physical education, but also by those of scientific organisation of labour, that is, it refers to a social subsystem other than physical education. Physical culture used within the framework of daily life acquires specific features depending on the distinctions of this life (health-building and hygienic forms of day-to-day physical culture). Physical culture within the system of special medical rehabilitation measures acquires the features of the so-called "medical physical culture". *Similarly, any other form of the functioning of physical culture, included in this or another social subsystem, is distinguished by its specific features which are derivatives of this subsystem.* From here follows the necessity of special investigation of their specific features and the laws of their functioning in the interests of the full satisfaction of practical requirements of the mass physical culture movement.

For certain reasons, some forms of physical culture that do not coincide with traditional physical education and the high-performance sport, have found themselves outside the sphere of the intensive application of science. This is true of the individual ways and means of going in for physical culture and sports in daily life, and also, although in a different degree, of physical culture activity which takes an ever greater share of the free time budget of the main groups of the adult population. As a result, a considerable part of a wide practice of drawing people into physical culture has found itself in a "vacuum" devoid of any scientific atmosphere, which often gives rise to empiricism, simplification and various pseudo-scientific trends (something like home-made modifications of the "Yoga system", "culturism", "macrobiotics", etc.). Such a state of affairs contradicts the growing social significance of the mass forms of physical culture, and it should be rectified, within the shortest possible time, by a

thorough elaboration of the correspondingly specified applied branches of scientific knowledge. Of special practical significance among them, in the present conditions, are the theory and methodology of production, day-to-day health-building and recreational and recuperative physical culture. Serious research in these fields is of great significance for formulating the general theory of physical culture.

Although the existing complex of scientific concepts about individual aspects, features and forms of physical culture and sports has quite a few drawbacks, this does not exclude, but on the contrary, presupposes the expediency of intensifying the efforts aimed at formulating a synthesising theoretical discipline, a discipline which would embrace the entire sphere of physical culture (in another version, the sphere of sports, too); would interpret it as a whole, revealing the existing general laws, and creating on this basis an integral scientific picture of the given sphere of reality. It is well known that the integrity of scientific concepts, and hence, the possibilities of science to have an effective impact on practical activity, are determined not only by an abundance of partial information obtained as a result of research, which reflect reality in a fragmentary way. More than that. The mass of fragmentary data which are not regulated by the logic of a general theory not only does not accelerate the forward march of knowledge, but can hamper it, just like any chaotic conglomeration appearing in the way by accident. It is not fortuitous that in modern science, under the impact of the growing danger of the "information explosion", more attention is being given now to the problems of elaborating generalising approaches (for instance, systems approach) and formulating general theories—metatheories.[6]

Some outlines of the general theory of physical culture and sports. Among the problems of the further elaboration of the general theoretical foundations of physical culture and sports, the first to advance are questions about the definition of the subject of the broadest generalising discipline in this sphere, about its leading aspect and its correlationship with bordering disciplines. So far there are no generally accepted answers to these questions. However, some possible solutions have appeared lately.

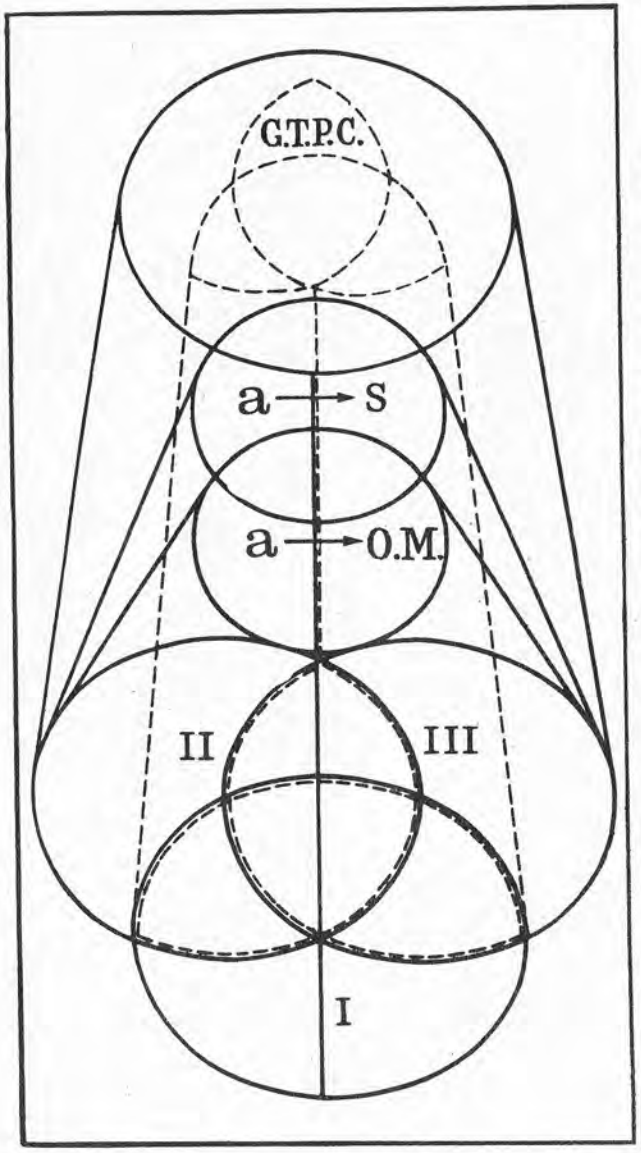
One of them is connected with the formation of the course of the theory of physical culture as a generalising subject of physical education. It is included in the new curricula of the institutes of physical culture in our country, and is being taught in some other countries. The first experience of elaborating the problems of this course has revealed both general trends and variations in approaches. In Czechoslovakia, for instance, this course is so far

largely elaborated in a sociological-culturological aspect,[7] in the German Democratic Republic—in historico-culturological.[8] We believe—and this is corroborated by the results of a representative discussion held in recent years[9]—that the general theory of physical culture should have its own (theoretical-integrative) aspect which, naturally, does not exclude sociological, historico-logical and other aspects, but is not reduced to them. The basic range of problems of the general theory of physical culture will apparently be comprised by problems of an integral comprehension and interpretation of the sum total of components and connections forming physical culture as a multifaceted phenomenon; problems of the study of its fundamental properties and relationships in the structure of real life (both social and natural), and general laws determining the various forms of its existence, its functioning and development. The scientific and practical significance of these problems is, in our view, quite evident.

The relationships of the general theory of physical culture and certain related disciplines of a more or less generalising character can be illustrated, to some extent, by Scheme on p. 34. These relationships are ultimately conditioned by the structure of that sphere of objective reality which should be reflected by the general theory of physical culture and disciplines bordering on it. We proceed from the premise that in the given sphere there are at least three big components: 1) basic physical education as the principal organised pedagogical form of the purposeful use of physical culture in society; 2) sports, and 3) forms of physical culture going beyond the boundaries of physical education and sports proper (that are not reduced to them completely). The first is the object of the theory of physical education, the second—the object of the theory of sports, and the third—the object of the theory of health-building, hygienic, recreative, production, medicinal physical culture and other specially adapted forms of it. The general theory of physical culture (GTPC) emerges, first of all, as if in a zone of intersection, "mutual superposition" of all the spheres of theory mentioned (see Scheme). And it borrows precisely that which is *common* to them, unites them. At the same time GTPC is organically connected, up to partial coincidence, with such branches of scientific knowledge under formation as sociology of physical culture and sports, their organisational-managerial and economic foundations, as well as the history of physical culture and sports and a number of other disciplines. They are distinguished from one another by the specific features of the subjects and aspects under investigation.

What we have said does not solve all concrete problems of the relationships of GTPC with bordering fields of knowledge. These relationships have to be thoroughly analysed, particularly, with the

Scheme depicting the sphere of the formation of the general theory of physical culture (GTPC) and its correlation with some related disciplines



I—Subject-matter of the theory of physical education;
II—Subject-matter of the theory of sports;
III—Subject-matter of the theory of applied and other forms of physical culture going beyond the boundaries of basic physical education and sports.
a→OM—organisational-managerial aspect of the theory of physical culture and sports;
a→S—sociological aspect of the theory of physical culture and sports.
The dotted line denotes the "overlapping" zone of bordering subject spheres where the greatest prerequisites are taking shape for synthesising the general theory of physical culture.

theory of physical education. Evidently, a definite part of the content of the present theory of physical education (its general foundations, first of all) should join GTPC. This will not mean the abolition of the theory of physical education as a relatively independent scientific discipline. On the contrary, its development as the science about the specific laws of physical education will be one of the major conditions for the progress of GTPC. We have already mentioned that in principle they correlate as the general and the particular. Their unity is determined in this case by the fact that physical education as the basic form of the purposeful use of physical culture in society has a number of common features with other forms of physical culture. These common features represent a subject of special interest to GTPC. And the "dividing line" between GTPC and the theory of physical education follows from the specific features of physical education and the objective difference between the various forms of physical culture existing in society.

The question of relationship between GTPC and the theory of sports also requires a special analysis. The general theory of sports, just like GTPC, is in a state of formation, although some of its big sections have already taken shape and been introduced in the curricula of special educational institutions (for example, the theory of sports training). The correlation of GTPC and the general theory of sports ontologically stems from their objective community and at the same time the specific nature of their factological foundations. It is well known that sports, in a majority of cases, belongs to physical culture, forming its organic part. Hence, the theory of sports coincides, in a large measure, with the theory of physical culture. However, there is no full coincidence because, first of all, the object of the theory of physical culture is somewhat broader than that of the theory of sports. On the other hand, sports are not entirely a part of physical culture. In principle, any kind of activity having a significance for the development of human abilities can become a sport, if it is modified as a subject of competition and organised according to the laws of sports perfection. There are many sports which do not have specific features of physical culture phenomena, or have a rather indirect connection with it (sports of competing design and construction activity: aircraft and car modelling; sports based on abstract logic operations—chess and draughts, and all other sports where achievements do not directly depend on the degree of the physical activity of the sportsman). The general theory of sports shall apply to such sports, too. It is now difficult to say whether the general theoretical foundations of physical culture and sports will take shape within the framework of a uniform theory, that is, the general theory of physical culture and sports, or whether the

trend to their differentiation as relatively independent disciplines will gain the upper hand.

With the aim of applying GTPC to the whole diversity of forms of physical culture, it should, undoubtedly, pay special attention to the mass forms (physical culture in the structure of the mode of life of the basic sections of the population, in the system of scientific organisation of labour and rest, etc.). Such a purposeful character will be useful also for a correct orientation of specialised disciplines. The thing is that a number of disciplines have lately developed an obviously narrow "sports" aspect. For instance, the theory and methodology of track and field events, swimming, sports games and even gymnastics began to be presented in recent years mainly as applied sports disciplines. The fact seems to be forgotten that all these practical events (gymnastics, track and field, games, swimming, etc.), exist not only as sports but, above all, as elements of physical culture, and that is why their theoretical and methodological comprehension and interpretation can, and should, in no way be reduced to a purely sports aspect.

As the scientific-theoretical content of GTPC is being enriched and its cognitive apparatus improved, its concrete methodological significance will increase for all particular disciplines dealing with individual aspects of physical culture. A major condition for this is the consistent implementation of the general principles of dialectical-materialist methodology in the methodological foundations of GTPC, and also the broad utilisation of integrative-scientific forms, means and methods of cognition, whose growing role in forming uniform scientific knowledge is justly emphasised at the present development stage of science.[10]

Naturally, the degree of substantiation of many premises of the theory of physical culture, which has not only social but biological aspects, essentially depends on the depth and breadth of corresponding natural scientific generalisations. The branch disciplines of a biological character that have taken shape by now (applied specialised branches of dynamic anatomy, biomechanics, physiology, biochemistry, etc.) so far do not provide a sufficiently broad basis. To create this basis, a new discipline (or disciplines) may be required, with a higher level of natural scientific generalisations. It may be, tentatively speaking, the bio-anthropological foundations of physical culture and the applied theory of adaptation, which would reflect, in an integrated manner, scientific information about the laws of man's philogenesis and ontogenesis in the conditions of the purposeful impact of physical culture and other factors; about possibilities and expedient limits of purposeful changes in the morpho-functional properties of the organism with the help of physical culture; about the biological principles of optimising the natural process of

physical development of the organism, means of motor activity, etc. The question about the subject and concrete content of this or another similar sphere of scientific knowledge will naturally be solved by specialists in the respective field. We emphasised here the need to eliminate gaps in the general biological foundations of the theory of physical culture.

The timeliness of the elaboration of GTPC is now prompted, among other things, by its introduction as a leading compulsory subject of higher physical culture education. Up to now its content and structure have been outlined in a most general initial form, calculated on a transitional complex course. In Soviet institutes of physical culture, it included a number of generalising sections of the theory of physical education, the theory of sports, and some sociological and culturological problems of physical culture and sports. Even in this form this course, we hope, will contribute to improving the training of specialists, their broader views and the fundamental formation of their professional creed. At the same time it is evident that constructive discussions are necessary of the development prospects of scientific disciplines in the sphere of physical culture and sports. The World Scientific Congress to be held in this country in connection with the 22nd Olympic Games is certain to play an important role in this.

NOTES

[1] *Sports in Modern Society. The World Scientific Congress* (collection of scientific materials), Moscow, 1978 (in Russian).

[2] The term "theory" is used in a broad meaning—to denote some synthesising theoretical discipline (just as they speak, for instance, about "the theory of education", "the theory of culture", etc.), and not to denote an individual, strictly formalised theoretical concept.

[3] The problems of the formation of cultural studies as a relatively independent generalising sphere of interdisciplinary knowledge have been thoroughly evolved in recent times.—See, for example, "Culture, History and Modern Times", Round-Table Discussion arranged by *Voprosy filosofii* (No. 12, 1978, pp. 149-154).

[4] According to the data of a wide investigation conducted at the initiative of the International Association of Higher Schools of Physical Education (A.I.E.S.E.P.), the curricula of the institutes of physical culture and other such institutes in various countries have more than 100 disciplines. Even if we assume that there are possible errors due to terminological reasons, it should be admitted that the differentiation of the disciplines of special physical culture education is now far advanced. (*Conférence internationale de l'A.I.E.S.E.P.*, 1975, Nessebre, Sofia, 1978, pp. 5-26.)

[5] This was reflected in the first curricula of the Soviet institutes of physical culture, which already in the 1920s included the subject "Theory and general methodology of physical culture" (see *Collection of Summaries and Curricula of the State Central Institute of Physical Culture*, Moscow, 1927). Then, instead of that discipline "Theory and methodology of physical education" was introduced, which

practically dealt with only a part of the problems of the general theory of physical culture. The latter officially reappeared in higher physical culture education only during the 1970s.

[6] See, in particular: J. Bernal, *Science in History*. London, 1954; I. V. Blauberg, E. G. Yudin, *The Formation and Essence of the Systems Approach*, Moscow, 1973; G. N. Volkov, *Sociology of Science*, Moscow, 1968; B. M. Kedrov, *Classification of Sciences*, Moscow, 1965, Vol. 2; *Synthesis of Modern Scientific Knowledge*, Moscow, 1973 (the last four—in Russian).

Pressing problems of the integration of scientific knowledge have become a subject of especially broad discussions at the all-Union conference held at Obninsk, Kaluga region, in September 1978 (see a brief review in *Voprosy filosofii*, No. 2, 1979, pp. 161-164).

[7] *Teorie ta praxe tělesně výchovy*, No. 4, 1978, pp. 197-201; No. 5, pp. 260-273.

[8] "Theorie und Praxis der Körperkultur", *Gesellschafts-wissenschaftliche Beiträge—Lehrmaterial*, 1977.

[9] "An All-Union Discussion on Problems of the Development of the Theory of Physical Culture", *Teoria i praktika fizicheskoi kultury*, No. 3, 1976, pp. 71-73.

[10] See, for example: M. R. Solveira, A. Ursul, "Integrative and General-Scientific Means of Cognition", *Obshchestvennie nauki*, No. 4, 1978, pp. 119-134.

The Methodology of Research into Sport as a Social Phenomenon

VLADISLAV STOLYAROV

The needs of the current scientific and technological revolution, the doubling, on average, of man's leisure time over the last 50 years and the improvement of living standards under socialism have resulted in sport becoming an important social phenomenon within a relatively short historical period. Millions of people are now actively participating in sport, doing physical exercises and taking part in competitions.

Intense development of sport in the 20th century, particularly over the last few decades, and the growing impact of sport on all aspects of human life have raised a large number of questions concerning the social essence of sport and its role in modern society. What is sport as a social phenomenon? What are the determining factors in the sharp increase in the popularity of sport that has been called the phenomenon of the 20th century? What is and should be the position of sport in society? How is it connected with other social phenomena?

These questions now assume special significance, for sport may perform various social functions and have both positive and negative social consequences.

Two extreme approaches may be discerned in the solution of the problem of the position of sport in society and its connection with such elements of the social system as, for instance, economic relations, the social and class structure, politics, and ideology.

On the one hand, there are attempts to present sport as an ideal "closed system", as a completely autonomous sphere of human activity independent of other elements of the social structure.[1] Within the framework of this approach, the social

essence, social functions, and social significance of sport are analysed on the basis of abstract speculations about the eternal nature of sport and man irrespective of the concrete historical conditions under which they develop and irrespective of the specificity of the social system in which they function, and attempts are made to give a purely biological interpretation of the essence of sport and man.

On the other hand, absolute dependence of sport on social environment is postulated and any internal laws of the functioning and development of sport, continuity of its development, etc., are rejected.

The Marxist concept of sport which we uphold is based on a materialist interpretation of history and recognition of essential dependence of sport on the entire social structure of society. This dependence is not always self-evident. Indeed, if the scope of analysis is limited to rules of sport competitions, the technique and tactics of the various sports, and certain systematic aspects of training, any dependence of sport on the social environment or, at any rate, on the social and class structure of society will be rather hard to trace. That is what creates the illusion of the complete autonomy of sport and gives rise to the conception of sport as a closed system.

However, this illusion disappears as soon as we turn to such aspects of sport as the forms of its organisation, its use and purpose in a certain social environment. A comparison in the organisation of sport in the socialist and the capitalist countries will suffice to demonstrate the essential differences in this sphere: on the one side, there is the harmonious development of mass sport and high-performance sport on the basis of a stable state system of physical education aimed at the physical perfection of all members of society; on the other, we have the one-sided development of elitist, professional, and show sport, mostly on a commercial basis.

We believe that the Marxist thesis of the dependence of sport on the social system is of great significance for the solution of a number of problems involved in defining the role of sport in modern society, in particular for the solution of the widely debated question of the humanistic value of sport, its role and significance for man and mankind.

This question has recently been a matter of considerable debate; it was the subject of many reports and speeches at the Olympic scientific congresses in Munich (1972) and Quebec (1976) and at the World Scientific Congress in Moscow (1974). It is touched upon in many articles and monographs.[2] The views of those who recognise the humanistic value of sport and of those who reject it naturally differ.

The former point out the fact that sport is one of the important means of keeping man fit, an instrument of his physical development and perfection. It has an important positive effect on man's spiritual world—his emotions, aesthetic tastes, ethical and world-outlook conceptions, for it opens up broad perspectives for the formation of highly moral consciousness and behaviour.

It is also noted that sport activity is essentially heuristic and creative, a probing into the unknown. The course and the results of this activity reveal man's qualities and capabilities and cultural ideals of eternal value. Sport provides for each individual enormous opportunities for self-perfection, self-expression, and self-assertion. It is the source of the joy of communicating with other men, of empathy and involvement, of pride for man and his unlimited possibilities. Modern sport is also an important factor in the development of contacts between individuals on an international scale, not only within one country. It plays an important role in increasing an understanding and rapprochement between peoples, promoting an atmosphere of trust and peace. The development of sport is an important aspect in the development of society towards greater democracy.

The opponents of the idea of the humanistic value of sport quote facts of a different nature. They refer, for instance, to the practice of taking harmful stimulants in the race for maximal results. In some cases sport serves as a means of stupefying the masses and distracting them from pressing social and political problems, as a means of manipulating public opinion, the cause of international conflict, and so on. On this subject references are made to a real war between two Central American states which has been dubbed "the football war", as well as acts of violence, hooliganism, and vandalism associated with sport. In speaking of the anti-humanistic tendencies in modern sport, one often refers to the increased complexity of rules in all sports and a dangerous increase in the number of competitions in recent times. Attention is also drawn to intensification of training, increased commercial domination of sport, the ever greater dependence of sportsmen's results on the achievements of science and technology, etc. All this is used to support the view of sport as a manifestation of the allegedly innate aggressive instincts of the individual, of pathological personality, to support the conclusions as to man's alienation in sport and its anti-humanistic content, etc.[3]

Thus there are diametrically opposed opinions as to the role of sport in modern society and its humanistic value, both of these conflicting views being substantiated by references to actual facts and appropriate arguments.

The question of the humanistic value of sport, however, is in some cases given a one-sided and simplistic interpretation, in our

view. It is sometimes believed to be possible to restrict oneself to the effect of sport on man's organism. While recognising the humanistic value of sports, one sometimes has in view only its significance as a means of physical education, of man's physical perfection, of restoring and increasing man's health. This approach opposes sport to the cinema and other elements of culture which leave their imprint on man's personality.

Frequently, the evaluation of the social significance of sport is primarily concentrated on the benefits of sport for an individual or social group, benefits in this case being interpreted as the sum of material wealth (profit) or the success and prosperity that may be achieved through sport.

The one-sided approach to the humanistic value of sport is also in evidence when one only takes into account, as sometimes happens, the effect of sport on persons directly practising sport, disregarding the essential influence of modern sport on spectators, sports fans, and all those who are in some form or other concerned with sport or involved in the sphere of sport. Besides, sport is sometimes reduced to just one of its forms, reference being made exclusively either to mass sport or high-performance sport without a clear distinction between these two forms or the historical trends of the development of sport.

To solve the problem of the humanistic value of sport, it is necessary, in our view, to perform a *thorough* analysis of the effect of sport on man and mankind. First and foremost one should assess the effect of practising sport on the functioning of the organism, on the state of a person's health, and the effectiveness of his activity. It is important to establish the specific cultural values which are formed in the sphere of sport and compare them with other values of material and spiritual culture. It is also important to determine the mechanism and results of the effect of sport on the personality, on the structure of man's moral qualities, his value orientation, aesthetic ideals, etc. One cannot bypass the influence of sport on man's needs and their gratification, his position in the society, the latter being taken to encompass not only his material well-being but also his prestige, rights, freedom, the whole of his activity.

Having established the role and significance of sport for an individual, it is further important to establish the effect of sport on the social relations between men, on the formation of groups and the changes in these groups, the interrelations between different countries and peoples, etc. Along with the effect of sport on sportsmen themselves, one should take into account its effect on all those who are in one way or another connected with sports, involved in sports competitions, including coaches, spectators, sports fans, and others.

Lastly, one should establish, as accurately as possible, the entire range of the actually existing forms of sport itself, sports activities (mass sports, physical culture, high-performance sport, professional sport, the various kinds of sports, organised and unorganised sport), and assess the trends in further development of sport and possibility of emergence of its new forms.

In our view, in considering the question of the humanistic value of sport, one cannot fail to take into account the fact that the content, nature and orientation of sport, its positive or negative effect on man and the social relations essentially depend on the organisers of sport competitions, coaches, doctors, representatives of the mass media, scientific workers in the field of physical culture and sport, leaders of national and international sport organisations, etc. The real value of sport for an individual and mankind as a whole largely depends on the conscious and energetic activities of all these people, on their conscientiousness, honesty, and persistence. We know that sport helps one to keep fit, if sportsmen are under constant medical supervision and the training and participation in competitions are ruled by scientifically substantiated recommendations and prescriptions. Unless all these conditions are met, sport is harmful to one's health. Sport offers the greatest opportunities for the formation of highly moral consciousness and behaviour. At the same time, it may have a negative effect on morality, it may maim one's personality by bringing out egoism, cruelty, imaginary superiority over others, etc. In modern sport, it is often the very young who achieve success and, consequently, social recognition. This recognition, glorification and laudation may in some cases result in an excessive development of the negative aspects of a sportsman's personality. The negative or positive effect of practising sport on personality depends on a variety of factors; to a considerable extent it depends, in our view, on the content and orientation of educational work.

While recognising the great significance of man's conscious activity for the realisation of the humanistic value of sport, we also take into account, naturally, that the activity itself is essentially determined by the concrete social conditions of man, by the laws, attitudes, and goals of society in which he lives and works.

Wherever high achievement in sport is only regarded as a means of attaining material benefits, where sport is dominated by commercial interests and the goal of extracting maximal profit, as is the case with professional sport under capitalism, the hygienic, educational, and cultural functions of sport, or, in other words, its humanistic orientation, are inevitably obscured and shifted into the background.

Only a social order whose goal is man's allround development and not some objectives alien to man, is capable of creating conditions for the fullest and most adequate realisation of the humanistic value of sport.

The approach to sport proceeding from the basic laws of the functioning of socialist society differs from the bourgeois approach in that the solution of organisational problems, determining the trends and prospects for the development of sport in socialist society are governed not so much by considerations of economic profit as by the interests of the most effective solution, through sport, of the hygienic, educational, and cultural tasks, the practical realisation of humanist principles and ideals—the ideal of the harmoniously developed man, the principles of peaceful coexistence of states with different social systems, of peace and understanding between peoples.

In the Soviet Union, the activities of all the physical culture and sport organisations, of workers in physical culture and sport, coaches, representatives of the press, radio, and TV, etc., are directed at the attainment of precisely these goals. The same goals are served by a stable state system of physical education, complemented by an extremely well-developed and actively functioning system of spontaneous physical culture movement; the realisation in recent years of a number of steps for the development of the mass physical culture movement into a movement involving the entire population and for a harmonious development of mass sport and high-performance sport, for raising the effectiveness of educational work with sportsmen, etc.

All this does not mean, of course, that no difficulties emerge under socialism in solving humanistic tasks through sports. However, the socialist society possesses real preconditions for overcoming these difficulties and for a fuller manifestation of the humanistic orientation of sport.

In our view, there is no sense in abstract speculations as to the humanistic value, essence, content, nature and orientation of sport, as all this depends on the concrete historical conditions and the structure of the society in which sport develops and on the conscious activities of the individuals that organise it and use it for their goals.

We are convinced that the argument between those who recognise and those who reject the humanistic value of sport may only be resolved from the position of real Marxist humanism which rejects sterile moralising and attempts to proceed from an abstract moral ideal of man's universal essence without linking it up with the concrete historical conditions and the objective laws of social development. Marxist humanism propounds the idea of allround and harmonious development of the personality as an alternative for

a split and one-sided personality; moreover, it points out the objective historical laws and processes which create real conditions for the shaping of such a personality as well as the social forces whose activities promote such conditions.

The Marxist conception of the humanistic value of sport differs from the abstract conception precisely in that Marxists clearly realise the need for and indicate the road towards creating material and socio-political premises which make it possible to proceed from the sphere of abstract wishes and philanthropic speculations to actual utilisation of sport as an important means of moulding a harmoniously developed personality.

The analysis of the humanistic value of sport is indicative of the specificity of the Marxist approach to the solution of the social problems of sport and the methodological significance of the thesis concerning the essential dependence of sport on the social structure of the society that is accepted and substantiated in the Marxist conception of sport.

Linked to this is another thesis—that sport is a kind of mirror of social life, reflecting as it does the complicated processes within society. Without going into detail, we shall merely point out that this widely accepted thesis is sometimes given a distorted interpretation. In particular, the reflection of the social processes and structure in sport is sometimes interpreted in the same sense as the reflection of reality in knowledge (science) or the works of art or literature. On this basis, sport is viewed as an image-bearing reflection of reality and referred to the sphere of social consciousness, ideology, etc.

We believe this view to be erroneous, for in the given case it is not a question of reflecting reality in ideal images but one of the so-called indirect reflection, which we take to mean the correspondence between the specific structures of two phenomena.[4] In other words, since sport depends on the structure of society, its certain specific features correspond to definite specific features of the organisation, utilisation, etc., of sport.

From the methodological point of view it is important to bear in mind that sport as a specific sphere of man's activity and culture possesses a certain independence in regard to the social, class and economic structures of the society. What we have in mind here is the fact that sport is governed by certain specific laws determined by internal, and not external, factors and differing from the laws and processes of the development of material production and social structure. One may in this respect speak of the continuity and internal laws of the development of sport as a whole and its various kinds in particular, as well as of the development of the separate elements of its structure (technique, tactics, etc.).

The relative independence of sport is also manifested in the active role it plays in modern society. Sport has a considerable influence on the various aspects and spheres of social life—politics, economics, culture—far from being wholly dependent on the social system as a whole or its separate elements.

These are some of the methodologically important principles of research in sport as a social phenomenon, principles of interpretation of the social essence of sport, its role and position in society.

NOTES

[1] See, in particular, the report by the West German sociologist G. Lüschen at the World Scientific Congress "Sport in Modern Society" held in Moscow in 1974.

[2] See, for instance, N. I. Ponomaryov, *The Social Functions of Physical Culture and Sport*, Moscow, 1974 (in Russian); *Sport and an Individual*, Moscow, 1975 (in Russian); *Philosophy, History, Sociology* (Theses of the World Scientific Congress "Sport in Modern Society"), Moscow, 1974 (in Russian); *Abstracts of the International Congress of Physical Activity Sciences*, Quebec City, 1976; Bernard Jeu, *Le sport, la mort, la violence*, Paris, 1972; T. Lenk, *Leistungssport: Ideologie oder Mythos?* Stuttgart, 1972; *Sport im Blickpunkt der Wissenschaft*, Berlin, Heidelberg, New York, 1972; *Sport w społeczeństwie współczesnym*, ed. by Z. Krawczyk, Warsaw, 1973; *Kultura fizyczna i społeczénstwo*, ed. by. Z. Krawczyk, Warsaw, 1976; S. Slusher, *Man, Sport and Existence. A Critical Analysis*, Philadelphia, 1967; *Sport in the Modern World: Chances and Problems* (Papers, Results, Materials of the Scientific Congress, Munich, August 21-25, 1975), Berlin, 1973; P. Weiss, *Sport and Philosophic Inquiry*, Carbondale, 1969; E. F. Zeigler, *Problems in the History and Philosophy of Physical Education and Sport*, Englewood-Cliffs, 1968; E. F. Zeigler, *Physical Education and Sport Philosophy*, Prentice-Hall, 1977.

[3] Heinz-Egon Rösch, *Ist das noch Sport? Kritische Anmerkungen zum Sport und zu den Olympischen Spielen*, Basel, 1972.

[4] For details see V. I. Stolyarov, "Method of Cognition in the Light of the Theory of Reflection", *Lenin's Theory of Reflection and Our Times*, Sophia, 1969 (in Bulgarian).

Sport as a Factor in Moulding the Personality

OLEG MILSHTEIN

Sport is playing an ever increasing role in contemporary society. Sport has now become polyfunctional, part of our way of life; it has penetrated all areas of life, for example work, education (training), leisure-time—in a word, it has become a major element of social activity. One of the more important aspects of modern sport as an element of social activity linked with politics, economics, ideology, culture, is the so-called "Olympism"—the theory and practice of the international Olympic movement, one of the broadest mass international humanistic movements of modern times reflecting the general desire for peace, cooperation, and allround development of the individual.

The social essence of sport and the different effects it has on the personality is, I believe, most clearly revealed under socialist conditions, where the combination of physical culture, mass sport and high-performance sport (the "big sport") manifests itself in the transition from mass physical culture to the involvement of the entire population in physical culture, in the fact that an ever increasing number of Soviet citizens are actively participating in physical culture and sport, and in the increased impact of Soviet sportsmen's achievements on social consciousness: these achievements are becoming public wealth, their position in the system of values of modern society becoming increasingly important. The social significance of sports competitions (Olympic games first and foremost) as public events is growing, and so is the impact on society of the personality of the Soviet sportsman—citizen and worker, educator and student, organiser and performer. The

successes of Soviet sportsmen on the international scene, in particular at the Olympics, demonstrate the high level achieved by the Soviet Union in all spheres of social and cultural development. The attention of millions of people is focused on a sportsman's performance, on his behaviour, his life style and his image. The lively interest in sport shown by different social groups both in the USSR and abroad, which largely determines the interest of science in the theoretical aspects of sport, is growing steadily with the approach of the XXII Olympic Games.

The study of the social essence of sport in contemporary society has several aspects. One aspect, in particular, is that our society, recognising the considerable role of physical culture and sport, is making an attempt to draw the entire population into active pursuit of physical culture and sport, although a considerable portion of the population is as yet merely a consumer of sport as entertainment. Hence the need for the study of the social mechanism of sport's impact on the personality of the non-sportsman.

Another aspect attracting the attention of sociologists is the existence of a real contradiction in modern society, which is reflected in sport as well—the contradiction between the ever increasing need of the society for an allround, harmonious development of the personality, on the one hand, and the increasing tendency towards narrow specialisation in all the spheres of human activity, on the other.

In sport in particular, its growing complexity and intellectual content require not only the physical perfection of the sportsman but also broader spiritual world-outlook, special knowledge. At the same time, to achieve maximal results in sport, the sportsman has to be totally dedicated, something which calls for constant narrow specialisation and withdrawal from other spheres of activity.

The study of the above-mentioned aspects of the sport-personality relationship in which its dialectical nature is revealed, is the subject of an interdisciplinary research, which we began in 1968. The present article presents only one line of this study—the result of a concrete sociological study of the social makeup of Soviet participants in the Olympics, that is, the second aspect.

The sociological interpretation of the basic working concepts used in this study is based on the activity principle. The meaningful and functional aspects of activity formed the constitutive distinctive feature for singling out elements of the social (functional) structure of physical culture and sport. Thus we have: *physical culture* as an element of the social system and a specific mode of social activity directed at physical perfection as a part of the allround, harmonious development of the personality; *sport* as a mode of social activity (of a society, class, social group, or

personality) which is primarily characterised by purposeful motor activity and a desire to win through competitions and training; *mass sport* as an element of the social structure of sport and physical culture, being a mode of activity of various socio-demographic groups of the population which can mainly be found in education and leisure; *big sport* as an element of the social structure of sport which is a combination of the activity of a specific social-activity group (primarily youth) in their professional occupation, education, and leisure, aimed at achieving maximal results in sport and taking up a limited stage in man's life; *performance sport* is a mode of social activity of broad masses of the population consuming sport either through the mass media or by attending sports competitions.

Despite the relatively wide scope of scientific study of sociological problems of physical culture and sport in the USSR[1] the social makeup of the sportsman's personality has not, in our view, been studied thoroughly enough. Sociologists of Poland, Bulgaria, the German Democratic Republic, Hungary, Yugoslavia also pay considerable attention to problems of sport, but there again many studies deal with particular problems only.[2] Growing social contradictions in modern capitalist society, their reflection in sport, the misfortunes of professional sport, the fate of former great sportsmen in the capitalist countries arouse heightened interest in the sociological problems of sport, in particular, in the sport-personality relationship in the Western sport sociology, too.[3]

The enhanced national prestige of sport, the growth of the Olympic movement against the background of the worldwide tendency towards peace, detente, and cooperation, the development of international communication between scientists and sportsmen have resulted in the sociological problems of sport becoming the subject of wide debate at the pre-Olympic scientific congresses in Munich (1972), Quebec (1976), at the First World Congress on "Sport in Modern Society" in Moscow (1974), and at various international sociological congresses. Thus, at the IX International Sociological Congress in Uppsala (1978) the International Committee on the Sociology of Sport held five sessions on problems of sport included in the congress programme. The same committee has conducted an international comparative research on "Careers in Sport", of which some results have already been published.[4] In particular, the role of sport in moulding the personality is studied within the framework of another international research project.[5]

The above studies have been conducted under different socio-economic and concrete historical conditions, different techniques, methods and procedures being used in the process. Their authors frequently have diametrically opposed world-outlooks,

methodological and theoretical principles and premises. Nevertheless, in tackling the problem of the sport-personality relationship, naturally one cannot ignore the results of any kind of studies.

In our research of 1971-1976, the fundamental principle of analysing the interaction between personality and sport, between sport and society, that is, the interdependence and interconnection of the factors of *personality, sport, and society*, was the Marxist thesis of the essence of man. Hence the reliance on one of the methodological principles of Marxist sociology—the view of the personality of a sportsman as both the subject and the object of activity.[6] Another methodological premise on which our research is based is the view of the social makeup as the basis for the personality typology.[7] Lastly, we proceeded from certain theses of the sociological conception of the dispositional structure of personality elaborated in Marxist sociology.[8]

Guided by these general methodological principles, we conducted a sociological study of the top Soviet sportsmen, participants of the 1952-1972 winter and summer Olympic Games.

A sportsman is engaged in creative work and is formed as a personality not only in direct activity in sports. He is also engaged in other kinds of activity involved in study, work, acquisition of knowledge, communication.

The primary activity of a competitor in the Olympic Games, a member of a national team, is at a certain stage in his life certainly determined by his belonging to this or that sport society where he trains and whose colours he defends. That is apparently the fact which largely determines the specific personality traits of a sportsman. Modern sport, however, is directly linked with extremely diverse areas of the life of society and in turn makes an impact on these areas so that the sportsman's activities as a member of the national team are of an extremely varied nature.

Apart from that, an Olympic team member is also a member of a great number of different groups. In his varied activities he is constantly compelled to bring the system of values assimilated in sport in agreement with the requirements, norms, and systems of values of the secondary and high schools, the occupation, the family, and environment in leisure time. The degree of this agreement determines the measure of harmony in his personality.

The group of sportsmen under study is of considerable importance. Their importance is particularly evident now that an ever increasing number of young people are attracted to "big sport" and sport in general. Sport in general, "big sport" in particular, is primarily an activity of the young, for whom it is both accessible and attractive.

A sportsman's social activity, that is, the modes of realisation of various kinds of behaviour, appear as the system-forming feature

which characterises the social type of personality, the sportsman's image and his character traits, his norms of life, models of behaviour, and conditions of activity.

Therefore, the basic qualitative and quantitative characteristics of the social makeup of a sportsman, of his social typology were taken to include the socio-demographic data, his occupational, social-political, and sport activity, activity in education, at leisure, and in communication, as well as the everyday conditions of his life and activity including family relations and material well-being.

These characteristics enable us to understand and explain the laws of the formation of the sportsman's social makeup through interaction of three essential parameters of a greater degree of generality—general personality orientation, the sportsman's mode of life, and his sporting career. The first parameter includes all the basic subjective-objective data concerning the shaping of the sportsman's personality (personality and individual traits, activity motivation, dispositions, and needs). The second parameter, the mode of life, registers mainly the objective data—the conditions and situations of the sportsman's activity and the activity itself. The third parameter, the sporting career, registers changes in the sportsman's sporting status, which are conditioned by the dynamics of the social status and in their turn condition the latter. The interaction of these three generalised qualitative-quantitative parameters allows us to construct a model of the process—the social makeup of the sportsman combining personality orientation, the mode of life and the sporting career.

As a rule the sporting career of an Olympic athlete goes through several consecutive stages: involvement in sporting activities, the choice of one particular sport, the initial stages of practising it, the achievement of top results and finally participation in big sport.

Soviet sportsmen have taken part in seven summer and six winter Olympics in 33 events. This variety of sports, the 25-year record of Soviet participation in the Olympics reflect all the basic trends and changes characteristic of both Soviet physical culture and sport (mass sport, high-performance sport, show sport) and of world sport, the Olympic sport. The successes of the USSR Olympic teams representing three generations of Soviet youth, also reflect the Soviet achievements in the socio-economic, political, and cultural development in the years between the postwar period of economic rehabilitation and the beginning of the developed socialist society stage.

Observation of a selected group of members of USSR Olympic teams was used as a basis for tracing the various manifestations of the above-mentioned contradiction between the requirements of allround ability on the one hand, and narrow specialisation, on the

other, that are now made on sportsmen, at different stages in the development of sport in this country, as well as the dynamics of this process.

Additional specifying features for the given group were the length of sports career, length of professional occupation, kind of sport, changes in the conditions of training, of work, education and leisure. (Variation in the condition of sport activities, in particular, is determined by differences between kinds of sport, level of sporting skills, of activity in practising sport, etc.)

The unit of observation was an individual sportsman—competitor in the Olympic Games. That was the basis of recording the personality characteristics of the subject.

The universe of instances comprised 1,597 persons. That is the number of Soviet participants in the Olympics between 1952 and 1972. Mixed selection was applied. At the first stage, where Olympic team members' life stories were studied, complete statistics of an exhaustive nature were obtained with the aid of the Olympic Chart, a questionnaire establishing the basic socio-demographic characteristics, conditions of the sportsman's life and activities beginning with the start of his sporting career and ending with the time of the survey. (All data are brought up to 1972.) The questionnaire was filled out by a worker of the research group in a standard interview with a member of an Olympic team. 1,466 charts were filled out in eighteen months. The chart data were corrected from official documents and literary sources. At the same time sample interviews were conducted with experts—outstanding sportsmen, coaches, sports workers, scientists, journalists, and sports fans.

At the second stage, a four-stage stratified selection was made, in which two types of the "What Is Big Sport Like?"[9] questionnaire were applied—one for active sportsmen and the other for Olympic athletes of the past. The questionnaires were filled out in either of the following two ways. The active sportsmen were interviewed face to face during camp training, competitions, or in their homes. Some of them returned the questionnaires by post. Former Olympic team members were mostly contacted by post. All in all 730 questionnaires were obtained. After checking the manner of filling out the questionnaires and rejecting the defective ones, 716 questionnaires and charts were left for further processing, which constitutes 44.83 per cent of the universe of instances. Of these 412 were inactive (337 men and 75 women), which is 43.69 per cent of the overall number of Olympic athletes whose sporting careers are over; and 304 were active (250 men and 54 women), which is 46.84 per cent of the overall number of active Olympic team members. Participants in summer Olympics made up 47.36 per cent of the overall number of competitors in

summer games, while participants in winter games were represented by 29.61 per cent of the sportsmen. The data on individual games and events were also fairly representative.

The fact that about 100 of those who responded were participants in the winter (Innsbruck) and summer (Montreal) Olympic Games of 1976 justifies the extension of the results and conclusions of the survey to the universe of instances, that is, all the members of Soviet Olympic teams.

The high rate of questionnaire return should be noted. Most Olympic team members who sent in the filled out questionnaires by post gave their names (signing the form was not obligatory), which increased the reliability of the answers. Besides, the reliability was ensured by a number of other common procedures and technical devices.

Apart from the survey, the study of the life stories and documents, content analysis was applied to the memoirs of the "Sport and Personality" Series and the "World Sport Stars" Series.

The data of the survey (1973-1974) were then processed stage by stage at the computer centres of Tartu State University and Estonian Radio and Television (1974-1975). Different processing methods were used, including the method of multivariate analysis—cross-index automatic classification and pattern recognition (teaching without a teacher), and others.

The main research operations included the finding of a number of factor sets.

The first factor set covers the conditions and situations of the activity of a practising or former sportsman, that is, the conditions of activity at the major stages of his or her sporting career and life in general. The indicative factors here are the principal chronological data as to the beginning and end of practising sport in general and big sport in particular; the stages of education and work and the conditions under which this activity proceeded; the various stages and conditions of family life, family and marriage relations, everyday living conditions, the conditions of spending leisure time, social communication, etc. Here also belongs the structure of the stimuli for all of these kinds of activity.

The second large set of registered factors were the needs and motivation of the sportsmen's activity in study, work, sport, leisure, and communication.

The third set of indicative factors comprises the sportsman's personality traits, which largely determine the specific features of his activity and are, in their turn, determined by the social environment.

The fourth set includes the structure of personality dispositions, that is, those social-personality formations, those individual predispositions to activity which are the result of interaction between needs and the conditions of their emergence and realisation. These are attitudes, interests, and value orientations.

The last set includes the indicative factors of the sportsman's actual behaviour, that is, the behavioural acts in labour, sport, leisure, communication.

Here is how these indicative factors look. Both active and former Olympic team members are characterised, from the point of view of their social structure, by the following features. By the end of their sporting career almost all Olympic athletes have higher or specialised secondary education, which is the direct outcome of the humanistic nature of Soviet society guaranteeing education for all the young people of the country. The category of professional workers is the dominant one among sportsmen (occupations in the sphere of sport, just as in education and culture, belong to the category "professional worker"—coach, physical culture teacher, etc.).

By the time of their first participation in the Olympics, half of the sportsmen are already married. The overall figures for married Olympic team members are as follows: active Olympic team members, 67.4 per cent; former Olympic team members, 84 per cent. The number of sporting families with children is higher than the average statistics for the country.

A fifth of the active sportsmen and almost a third of former members of Olympic teams were born in rural areas. The overwhelming majority of sportsmen are city dwellers. In recent years migration of sportsmen from capitals of regions and constituent republics to Moscow and Leningrad, where many outstanding sportsmen formerly went to live, has decreased considerably. Conditions for the development of physical culture and sport everywhere have recently changed essentially. First-class sport centres have been built in the capitals and large cities of the Union republics, the level of the training of Soviet sportsmen has risen, there has been an increase in the construction of sports camping facilities, sports schools for children and youth, physical culture educational establishments. All this served as the basis for changing the sports map of the country.

Soviet Olympic team members represent the majority of the big nations and many of the smaller nationalities of the USSR. Among them are Russians, Ukrainians, Byelorussians, Georgians, Armenians, Azerbaijanians, Letts, Lithuanians, Estonians, Moldavians, Uzbeks, Kazakhs, Tajiks, Turkmen, Tatars, Jews, Chuvash, Ossets, Mordvinians, Komi, the nationalities of Daghestan, Kabarda, Balkaria, Adyghei, etc.

This wide representation of the different nationalities is a reflection of the involvement of the entire Soviet people in sport and is a natural outcome of the national policy of our multinational state.

A large group of sportsmen (mainly participants in the 1952 and 1956 Olympics) are veterans of the Second World War. There are 68 of them. Among them are such world famous sportsmen as A.Vorobyev, I. Kotkas, A. Parfenov, V. Chukarin.Sixty-three Olympic team members received awards for their courage and bravery in the fight against fascism during the Second World War.

Here are some of the specific characteristics of the Olympic team members. Among the 716 sportsmen in the survey there are 131 world champions, 137 European champions, 564 champions of the USSR, 7 champions of other countries. Three hundred and thirteen sportsmen have been given the honourable title of Merited Master of Sport, and 177, Master of Sport of International Class. Almost two-thirds of all Olympic team members are champions and prize winners at Olympic Games. Every fourth active participant in the games is a champion (among former sportsmen the proportion of champions is 17.6 per cent). A third of former sportsmen and one-fourth of all active Olympic team members took part in the games two or more times, the proportion of women among them being somewhat higher than among men. Among active sportsmen there are almost twice as many champions who won their title twice than among former sportsmen.

Twenty-six former sportsmen and 17 active Olympic team members surveyed took part in the Olympics three or four times. Among them are such outstanding sportsmen and sportswomen as K. Aleksandrov, P. Astakhova, P. Bolotnikov, A. Vorobyev, G. Volnov, V. Golubnichiy, Ye. Grishin, G. Gorokhova, V. Ivanov, M. Itkina, I. Kalita, B. Krepkina, L. Latynina, A. Medved, Ya. Midler, I. Novikov, N. Ponomareva, A. Roshchin, T. Samusenko, V. Saneyev, G. Stepanova, S. Filatov, B. Shakhlin.

Many of the Olympic team members have been awarded the Order of Lenin, the Order of the Red Banner, the Badge of Honour, and various medals for outstanding achievements in sport. All in all, 71.1 per cent of former sportsmen and 46.1 per cent of active Olympic team members have been given awards by the Soviet government, 9.5 per cent of former Olympic sportsmen and 2.6 per cent of active ones have been elected to Soviets. These and other awards, those of the Central Committee of the YCL, for example, as well as awareness 97.1 per cent of former and 56.8 per cent of active sportsmen carry out at the places where they study or work and in the national teams, are evidence of their high social and political public activities.

The absolute majority of Soviet Olympic team members (81.5 per cent of former and 64.2 per cent of active) are graduates or have yet to complete their higher education; 51.1 per cent of former sportsmen are graduates in physical culture; 3.2 per cent of them take post-graduate courses.

Twenty-nine of the subjects surveyed have academic degrees of Doctor or Candidate of Sciences. These are A. Aliyev, A. Vorobyev, L. Gissen, G. Gorokhova, V. Kuznetsov, A. Loshchilov, E. Petushkova, I. Ter-Ovanesyan, and others; 16 former sportsmen are professors or associate professors (Docents), while 12 are senior scientific workers. The various branches of science are fairly widely represented, including pedagogy, medicine, history, philosophy, economics, biology, physics, law, the technical sciences, etc.

However long the sporting career and whatever outstanding successes a sportsman may achieve, a considerable part of his life after the end of his sporting career is devoted to labour activities, which also determine his position as a citizen and his social makeup. This image is most fully characterised by the generalised typological parameters and the three social types of an Olympic team member's personality.

Sportsmen belonging to the first typological group have a creative attitude to all kinds of activity at all stages of their sporting career and life outside sport, they are distinctly socially active in sport, studies, labour, social and political life, and they obtain deep satisfaction from this activity. Typical for them is a high level of achievements in sport, although the period of practising high-performance sport is short, and also a high level of education and social and professional status, widely ranging interests, high cultural and creative activity. Their essential feature is also greater variety and considerable stability of value orientations in all kinds of activity, particularly in professional occupation and sport. They are also more selective in the forms and means of social communication in sport, at work, and at leisure. In leisure, active elements prevail over the consumer type elements. They take an active part in the social and political life of their collective, city, republic, country at all stages of their sport activity as well as after ending their sporting careers. On the whole, sportsmen of this type are characterised by a varied personality orientation and a dynamic mode of life. They are the closest approximation to the ideal type of harmoniously developed socialist personality.

Sportsmen of the second typological group, the most numerous in sport, are first and foremost characterised by high activity in sport at all stages of their career. With them, instrumental attitude to all kinds of activity dominates over the creative one. Value orientations and evaluations of the significance of various kinds of

activity, their content and goals are less stable than in the first group. Their social and political activity increases considerably after the end of their sporting career, which is, as a rule, of greater duration as compared to the first group. Just as with sportsmen of the first group, their interests are varied in structure (although specifically sporting interests are dominant), they obtain great satisfaction from activity in sport, professional occupation studies, leisure and social communication. The differences here depend on such distinctive features as sex, kind of sports, age, etc. Characteristic for this type of sportsman is a certain degree of discord between professional occupation and sport, although in the other sets (combinations) of kinds of activity (work and studies, sport studies, work and leisure, sport and leisure) there is a sufficiently high standard and degree of generality and harmony of value orientation, direction of interests and social attitudes. Their mode of life is also rather dynamic although somewhat more stable than in the first group. This social type of personality is marked by high social activity, sport activity being dominant among other kinds. On the whole, this social image approximates the modal type of our contemporary.

The third typological group of sportsmen (the smallest one) is marked by a clearly expressed performative nature of their activity, that is, by predominance of performative activity over creative and instrumental. A feature of sportsmen in this group are considerable differences in the degree of involvement in professional occupation, sport, social-political, cultural, and other types of activity; a low degree of combination of studies and sport, studies and work, work and sport; insignificant variation and stability of value orientation and orientation at different kinds of activity; a certain predominance of elementary orientations over social ones; considerable predominance of sport activities over other kinds of social activity; lastly, great differences between orientation in sport, work and studies, and a prevailing orientation at the sporting career. The mode of life of sportsmen of this group is less dynamic, the sportsmen themselves are less versatile, the kinds of their activity are in lesser agreement than in the first two groups.

Multivariate analysis and activity indices computation were applied to this typology to obtain five empirical personality types of active and former Olympic team members reflecting intermediate subtypes of the social makeup of sportsman. Combined with the basic social types, they are evidence of the fact that sport in general and big sport in particular are a specific environment exerting considerable influence on sportsmen's mode of life, their personality orientation and social makeup.

This analysis warrants the following conclusions.

Motivation and stimuli for sport activity, the needs and dispositions of the personality, that is, the general orientation of the personality, largely depend on the kind of sport, the level of sporting skills and achievements in sport, the duration of practising sport, as well as on socio-demographic characteristics and personal abilities.

The stable mode of realising and reproducing socially significant interests and needs of the sportsman, or in other words, his way of life, are somewhat specific. This specificity is determined by factors of sport activity, including the content, nature and organisation of competitions and training (particularly during training and study at camps); combining studies and/or work with practising sport; the way of spending leisure time; living conditions; family and marriage relations; the relations between the sportsman and the coach, the team collective, sports workers, fans, newsmen.

The sportsman's activity in big sport frequently coincides with choosing a career and studying towards it, the beginning of a professional career, changes in his social status (social shifts) and a number of other important occurrences in his life. This determines the specificity of the formation and development of the main stages in his sporting career and the rest of the sportsman's way of life.

The principal stages of his sporting career are shaped by general social conditions but, apart from that, they depend on the kind of sport; the age at which his sporting career began, the collective in which it started; his place of work or studies; the duration of sport or professional activities; personality type; the sportsman's relations with his environment.

The social status of an active sportsman depends to a greater degree on sporting achievements than that of a former sportsman. With the latter, the social status is determined not so much by his past achievements, sporting skill or length of sporting career as his social makeup and personality type.

The more progressive the social type of the sportsman, the higher the sporting, professional and social-political activity, that is, the principal constituent features of the social makeup of an Olympic team member.

The typological characteristics of top Soviet sportsmen are on the whole a clear reflection of the new personality type embodied in the Soviet man of the epoch of developed socialism, of his ideology, outlook, culture and way of life.

NOTES

[1] O. A. Milshtein, *The Sociology of Physical Culture and Sport in the USSR. A Review of the Basic Trends and an Annotated Index of Literature (1918-1974)*, Moscow, 1974 (in Russian).

[2] A. Mladenov, *Sociological Studies in Sport*, Sofia, 1975 (in Bulgarian); A. Mihovilovic, *Vzhunski Sportasu*, Zagreb, 1974; *Filozofia i socjologia kultury fizyczney*, ed. by Z. Krawczyk, Warsaw, 1974.

[3] D. W. Ball, J. W. Loy, *Sport and Social Order*, Massachusetts, 1975; H. Edwards, *Sociology of Sport*, Illinois, 1973; R. S. Gruneau, J. G. Albinson, *Canadian Sport. Sociological Perspectives*, London, 1976; J. Loy, B. McPherson, G. Kenyon, *Sport and Social Systems*, London, 1978; G. Lüschen, K. Weiss, *Die Soziologie des Sports*, Darmstadt, 1976; N. Nelisen, J. Foppen, *Top sport in het geding*, Leiden, 1972; H. L. Nixon, *Sport and Social Organization*, Indianapolis, 1976; F. Pfetsh, *Leistungs-sport und Gesellschaftssystem*, Schrndorf, 1975.

[4] R. Sugawara, "The Study of Top Sportsmen in Japan", *International Review of Sport Sociology*, 1972, Vol. 7, pp. 45-68; P. Vuolle, "Sport as Life Content of Successful Finnish Amateur Athletes", *International Review of Sport Sociology*, 1978, Vol. 3 (13), pp. 5-27.

[5] G. Kenyon, B. McPherson, *Cross-National Project: Leisure Role Socialization. Summary of Project*, Waterloo, 1972; F. Landry, W. Orban, *Sociology of Sport*, Miami, 1978.

[6] L. P. Buyeva, *Man: Activity and Communication*, Moscow, 1978 (in Russian).

[7] A. S. Kulagin, *Some Problems of the Social Makeup of Young Intellectuals: Scientists and Engineers* (Absract of Dissertation), Moscow, 1970; G. L. Smirnova, *The Soviet Man. The Moulding of the Socialist Type of Personality*, Moscow, 1973; *The Socio-Psychological Portrait of an Engineer*, (Based on the materials of a survey among engineers of Leningrad designing bureaus), ed. by V. A. Yadov, Moscow, 1977 (all in Russian).

[8] W. Friedrich, "Attitude and Its Formation", *The Study of Problems of Youth in the GDR*, Moscow, 1976, pp. 121-147; V. A. Yadov, "On Dispositional Regulation of the Social Behaviour of an Individual", *Methodological Problems of Social Psychology*, Moscow, 1975 (both in Russian); V. A. Yadov, A. A. Kissel, "Satisfaction from Work: an Analysis of Empirical Generalisations and an Attempt at their Theoretical Substantiation", *Sotsiologicheskie issledovaniya*, No. 2, 1974, pp. 78-87.

[9] Methods of study are presented in detail in the author's Russian-language publications. Among them are "The Study of the Social Image of the Sportsman as the Basis for Personality Typology in Sport", *Conference on the Scientific Organisation of the Soviet Voluntary Physical Culture Movement*, Tartu, 1973, pp. 68-69; "Methods and Procedures in the Study of the Social Makeup of the Soviet Olympic Team Members", *Problems of the Theory and Practice of Physical Culture and Sport*, Minsk, 1972, pp. 10-12; "A Sportsman's Way of Life as a Sociological Problem (Some Methodological Problems of a Research Project)", *Teoriya i praktika fizicheskoi kultury*, No. 11, 1972, pp. 71-73.

* * *

The Ethics of Biological Research

IVAN FROLOV

One of the most heated debates at the 16th World Congress of Philosophy revolved around the "challenge" of modern biology to man's social conception. The discussion was triggered off by the obvious overestimation, now in evidence, of the significance of the biological (in particular, genetic) factors in man's life. Summing up scientific opinion in this field, it should be pointed out that under present conditions, contrary to what is asserted by some philosophers and specialists, there is a marked departure in biology from "pure" anthropologism, whose influence, it is true, is fairly strong and in certain cases even grows as a result of some negative processes of the scientific and technological revolution. It seems to me that it is precisely the concepts of social biologism that are increasingly advancing to the forefront today.

There is a certain revival of interest in the biologised conceptions of man and their intensified, at times sensational, circulation in scientific or popular-science literature and fiction. This is accounted for, partly at any rate, by the spectacular achievements of biology over the last few decades. There has been a notable revival of the neo-Freudian concepts of man, social Darwinism, etc., but now they are seeking "a scientific basis" in genetics. The question "genes or socium?", which is wrongly posed, is often answered in favour of the genes as a factor of universal significance, thereby man's genetic code is interpreted as the only or in any event the principal source of his personality traits. It is alleged that man is a "mistake of evolution", endowed by nature with a number of negative, genetically determined traits constituting a "time-bomb", which man cannot defuse unless he makes out the design of its "clockwork" (Arthur Koestler). In the opinion of some ethologists, a few other behavioural characteristics

of man, such as his allegedly inborn aggressiveness or, conversely, his altruism, are genetically determined as well.

This has led in recent years to a veritable explosion in research purporting to prove that the basic social principles guiding human behaviour in general have their main source not in the social environment but primarily in the biological, in particular, evolutional-genetic, factors. The existence of the biological sources of man's social behaviour, especially the aspects of this problem formed mostly under the impact of the ideas of Sigmund Freud and ethology (K. Lorenz, R. Ardrey et al.), is now being widely discussed in world science, as I have said before.

One cannot fail to see, of course, that in their specialised studies ethologists have discovered quite a great number of facts throwing a new light on the problem of genetically conditioned human behaviour. These facts, however, are often depreciated by the general trend of social biologism imparted to them in their conceptual interrelationship. As Lenin justly remarked, "the transfer of biological concepts *in general* to the sphere of the social sciences is *phrase-mongering*. Whether the transfer is undertaking with 'good' intentions, or with the purpose of bolstering up false sociological conclusions, the phrase-mongering nonetheless remains phrase-mongering."[1] What is more, such concepts, inasmuch as they refer to man's "perpetual", "hereditary" propensities to explain his aggressive behaviour leading to war, the division of society into classes, etc., obscure the social objectives of man. From the viewpoint of social biologism, the allegedly biologically determined traits of man and his behaviour can be corrected exclusively by adequate, i.e., purely biological, means. As far as the social environment is concerned, it is merely the background against which man's biological qualities come into play and may either keep them in check or contribute to their expression.

Of course, this ideological trend of the concepts of social biologism is not invariably manifested in pure form but it exists implicitly in the very foundation of its methodology. Take, for example, the very same ethology. Convinced that the root causes of aggression and violence are embedded in the atavisms of man's biological nature, R. Ardrey, one of the authors of this concept, maintains that when people defend the rights or independence of their native land, they are stimulated by motives absolutely identical with corresponding motives of lower animals. These motives are congenital and ineradicable.[2]

This approach has been adopted by many modern ideologists, art workers, and others, who are seeking, each in his own field, to impress on the layman's mind the idea that man is a vicious animal and all world culture is unable to change his brutal nature. What is

most regrettable here is not the way man is depicted (science and mankind's history also present a very controversial picture) but the fact that mankind is, in effect, disarmed thereby in its struggle against evil, which is of a social rather than biological origin.

The trends towards biologism also reveal their scientific untenability and misleading socio-ethical role in the concepts of modern social-Darwinism. True, after its heyday in the late years of the last and the early years of the present centuries it exists today largely as a specific *approach* within other theories and concepts. Thus, the primary thesis of social-Darwinism concerning the struggle for survival in human society, natural selection, etc., is incorporated not only in ethological but also in some anthropogenetic concepts. This is illustrated, in particular, by the Nobel Prize winner Jacques Monod's book *Le hasard et la nécessité*, where, in my opinion, he has biologised to the utmost and distorted the problems involved in man's evolution.[3] At the same time, he completely ignores the social factors determining man's essence, in particular, the possibilities for his physical perfection, cultural development, as well as the productive activities of man as the basis for the progress of society.

In addition to the ethological and evolution-genetic trends in contemporary social-biologism there is a wide sphere of influence of modern Freudianism, which is intensively exploiting data referring to the psycho-physiological factors of man's vital activity. Even the father of the modern concepts of psychoanalysis, Freud himself, obviously tended to identify man's essence with his biologically conditioned instincts of an asocial nature. According to Freud, the social factors perform exclusively the functions of suppression or relegation of the biological instincts. The social analysis of man's activity is also a stumbling-block for all modern concepts of psychoanalysis, which are, therefore, very strongly pervaded by internal contradictions and inconsistency. This is characteristic, for instance, of the psychoanalytical concepts of C.G. Jung, I. Horney, and others. Attempts to integrate Freud's psychoanalytic ideas with the Marxist concept of personality, like those made by E. Fromm, have also proved futile. Seeking to marry these antagonistic concepts, he is trying to surpass them by a vulgar sociological interpretation of Marxism.

Fromm defines his point of view as "neither biological, nor social"[4]; however, the difference of his concept from Freud's one on this plane boils down to substitution of psychological factors for the instincts. The very psychoanalytical approach to man remains almost unchanged, since, according to Fromm, the social environment is responsible only for the specific behaviour of man, whereas his essence is not determined socially but is conditioned

by the hidden impulsions and conflicts in the unconscious. It is precisely these factors, Fromm presumes, that play the decisive role. In his opinion, Marx was mistaken to regard man as an intelligent being, while in fact man is an irrational animal, as was proved by Freud.

This leads Fromm to Utopian schemes of the future, when both man's relationships with science and technology and his links with the natural environment will assume the character of harmonious unity. This, however, as he believes, will be achieved not through a rationally explicable operation of social factors but in consequence of effective, directly experienced enlightenment, which is called upon to release man's primary potentials and hold in check the forces of evil, to bring man nearer to a state of unburdened, natural behaviour.

This approach was shared, among others, by Herbert Marcuse, who believed that some inner changes in man should come first and be followed up by a change in social relations. At the same time, Marcuse, just as Fromm, "corrected" Marx by introducing "a biological dimension" of man, which is allegedly absent in Marx's doctrine, while in his concept of erotism he went even farther than Fromm in his attempts to biologise Marxism.

Thus, relapses into social biologism in the philosophical interpretation of man's essence manifest themselves today in a variety of forms.[5] This is expressed clearly enough in the so-called sociobiology, which has of late gained wide popularity within the Western scientific community (it was alluded to, in particular, by Gunter S. Stent, professor of Stanford University, USA, and some other delegates to the 16th World Congress of Philosophy). Sociobiology is claimed by its founders to hold an intermediate position between the doctrines of B. Skinner, who maintains that man's behaviour is completely determined by the environment, and K. Lorenz, claiming that man is a slave to his aggressive instincts. Like Freud in his time, the sociobiologists emphasise man's innate features but also allow for the influence of the environment. They believe that they can breathe a new life in Freudianism. R. Trivers, one of the leading theoreticians of sociobiology, goes as far as to allege that sooner or later the political sciences, jurisprudence, economics, psychology, psychiatry and anthropology will become departments of sociobiology. All this, of course, evokes not only sympathies on the part of a number of scientists but also—and to a much greater extent—scathing criticism, it being known that it is precisely the immoderate pretensions of the sociobiologists that are rejected, although it is admitted that some of their findings and hypotheses merit close attention.

The above-said is also true of the ideas of Edward O. Wilson, one of the founders of this school, expounded in his work *Sociobiology*,[6] whose main purpose is to show the genesis and nature of sociality and its role—predominantly constructive—in the evolution of life. According to Wilson, sociobiology is defined as a systematic study of the biological basis of any social behaviour. At present it is concentrating on the structure of populations, the means of communication, the physiological processes underlying social adaptation, and also deals with the problems of the social behaviour of primitive man and the adaptational traits of organisation in the contemporary most primitive human societies. Therefore, Wilson formulates the task of codifying social biology in such a way that it could be converted into a department or a branch of evolutionary biology and, in particular, modern population genetics. The style of Wilson's analysis and approach in general slightly separates his concept from the clear-cut forms of social biologism. On the whole, however, the concept of sociobiology does not abandon this methodological ground. Far from having the required clarity and precision in handling the fundamental problem of the relationship between the social and the biological, this concept in many cases elevates the latter to an absolute.

In this context it should be emphasised that Marxist-Leninist theory has not simply indicated the significance of the social factors *along with* the biological ones—their combination by no means amounts to an equivalent-dual determination of human nature, as some theorists sometimes try to present the case. Marxist-Leninist methodology defines the *dominating* significance of the social methods of investigation of man, opposing thereby the trends towards biologism which involve unscientific reduction of man's essential characters in their biosocial entirety to his individual aspects as a living, corporeal sensual being. At the same time, Marxist-Leninist methodology has nothing in common with the vulgar sociological approaches to man, which ignore (often with unconscientious, false allusions to Marxism) the biological nature of man, deny the significance of the biological methods in his investigation.

Marxism orients researchers on an analysis of the practical ways of integrating social and biological methods, their dialectical reciprocal influence and interpenetration, with the dominant significance of the social methods being preserved. In this light, the biological, in particular, genetic methods applied to man appear to us now as merely a certain new opportunity which will be wholly determined by and dependent for its realisation on social decisions, on the social choice that will be made by mankind.

The Marxists reject the abhorrent idea of creating human species adapted to specific social functions. They oppose, in

particular, eugenics and neo-eugenics primarily for scientific, theoretical reasons and show their evil social implications and their misleading essence on the philosophical plane, meaning the world outlook and methodology, denouncing them from the humanistic positions, as well as for moral-ethical reasons. At the same time, we should not overlook the realistic prospects opened by research in human genetics, medical genetics, which have been developing intensively and gained new opportunities in the last few years, especially with the progress of genetic engineering. This is something different. This is not eugenics. Eugenics means breeding "a new race" of man by purely genetic means (by selection, radical interference in the human genotype, etc.). Whether the human race will resort in the future to this method of improving its biological qualities is a matter for guesses. People of the future will certainly be cleverer, better, kinder and more humane than we are. It is up to them to decide what to do to themselves. In the present situation, however, propaganda of eugenic concepts has, in the opinion of many scientists, only a negative effect.

Nevertheless, we are being faced with quite a few acute problems involved in the socio-ethical control of research in human genetics, with a view to humanistic ideals, the ethical problems of genetic control in particular. These problems increasingly rivet the attention of scientists, which is evidenced, in particular, by discussions at various international genetics conferences, numerous articles and books on the ethics of genetic control and, finally, by the unprecedented movement of scientists for imposing a moratorium on some experiments in genetic engineering.

* * *

Modern biological research has raised a number of problems concerning the foundation of foundations of man's existence, and affecting the basis of science. Here are some of them: is science entitled to interfere in the biology, genetics and psyche of man and to what extent? Is such interference allowable from the viewpoint of humanistic ethics what socio-ethical principles should we abide by in the scientific study of man, especially in experiments on human subjects? What is the ethics of scientific exploration, how is it related to the universal ethical values of mankind? Finally, a number of scientists have raised the question of the socio-ethical control of research referring to man, the justification for a moratorium on some fields of research threatening man and the entire mankind. Is such control possible in

whatever form? Will it not restrict the freedom of research? How is this freedom related to the social and humanistic responsibility of science and scientists?[7]

The very fact that these problems are raised at all reveals with increasing clarity the dissatisfaction with the idea asserted over the centuries that science is a self-contained and absolute value, a sphere of unadulterated knowledge independent of all other values of humanity and standing above them, as it were. It is becoming increasingly obvious that science cannot develop in a "social vacuum", in isolation from its ideological, and socio-philosophical, ethical roots. The latter are embedded in the very body of science and are not something external to it. Extreme scientism based on the principle "nothing but pure research" is suffering a fiasco and rapidly quitting the stage. Scientists are realising more and more clearly the indisputable fact that their social responsibility, the role of the ethical principle in science should grow in geometrical progression, if mankind and science itself are to develop at least in arithmetic progression. The ethics of science is being asserted as a *sine qua non* of effective performance of humanistic-oriented scientific research. There is no alternative to this either for science or for humanity.

Today quite a few attempts are made to compile definite ethical codes to control research in human genetics, publications on the ethics of genetic control come out, a growing mass of works are published as progress is made in genetic engineering, etc. In addition, there is a special field of science (deonthology) which formulates ethical codes for medical researchers. To believe, however, as some scientists do, that these codes provide a *complete* solution to the problem is an Utopian illusion. For all the importance of these codes, they are not effective unless they rely on a wider social and political foundation and are reinforced socially and politically.

It is not without reason that modern science is compared to Pandora's box. Indeed, its eternal curiosity compels mankind to learn what is there beyond the Pillars of Hercules. But has mankind enough common sense, social responsibility and self-control to resist the temptation of dangerous curiosity? This is, in effect, a life-and-death question for mankind.

Hence the crucial importance attached today to the problem of socio-ethical control of science with a view to its humanistic orientation and development as a *science for man*. This implies purposeful guidance of science not only on a national but also on an international scale. It involves efforts to work out not only ethical codes but also agreements based on international law to regulate scientific research in areas affecting the vital interests of the present and future generations of men. Today, however, the

main problem, as I see it, is to implement more effective control over compliance with the existing socio-ethical and legal regulations, codes and agreements. The socio-ethical regulation of science which science and society as a whole are coming to realise as a vital necessity may provide the humanistic basis for a new stage of scientific progress freer than before. The social responsibility of scientists and the freedom of scientific quests are not alternatives.

All this has become strikingly manifest during the last few years, in particular in discussions of the socio-ethical problems of genetic engineering. The events and facts related to this problem are well known. As we know, serious steps have been taken to work out a definite regimentation of genetic engineering research.

The principles formulated at the Asilomar Conference of 1975 have supplied the basis for compiling acceptable regulations enabling control over the use of the methods of manipulating genes of living organisms, in particular, the use of attenuated strains of micro-organisms in many types of experiments. A number of standards have been laid for conventional physical protection, ranging from the simple use of standard microbiological methods to specially designed equipment with a reduced barometric pressure, insulated with air plugs, with showers at every entrance, etc. Three barriers of biological safety have also been established for some cloning experiments.

It is hardly necessary to describe here the highly specialised problems related to safety precautions in genetic engineering. Needless to say, they will become increasingly sophisticated, offering thereby ever wider scope for experimenting with recombinant DNA molecules. In particular this is facilitated by the creation of a transmuted micro-organism, into which laboratory investigations may be made and which cannot survive outside a laboratory (it is unable to populate man's digestive tract, to survive in his seminal material and can be destroyed easily with common detergents). This, of course, eliminates one of the basic barriers on the way of research into the recombination of DNA molecules.

It cannot be stated, however, that the situation which has taken shape in genetic engineering is at present perfectly clear and uniform. Problems that need an immediate solution continue to exist. "A jinn released from his bottle"—this is how many assess the imminent danger of research on recombinant DNA molecules. Numerous sensational articles and reports by newsmen and commentators about another Frankenstein monster likely to escape from a laboratory in the near future excited the world public and alarmed some scientists. True, in recent time the debates over genetic engineering have become less heated, because scientists are concerned about another problem of importance—a probable cut

in appropriations as a result of public protests and statutor acts of administration, which may, as some scientists believe, check the progress of science in general. Therefore, along with the growing movement for banning the dangerous experiments in genetic engineering, an intensive search is on for acceptable forms in which genetic engineering research could be continued. Legal, legislative aspects of the problem have an important role to play here. There are a growing number of proposals to revise the regimentation of genetic engineering research, to ease its regime in certain cases, and to revise individual regulations with a view to the experience gained in the last few years. Some scientists have taken a critical view of these proposals. Others, on the contrary, believe that the present regimentation is more often than not unjustifiably rigid.

In this connection doubts have been expressed as to whether the movement for a moratorium, the decisions of the Asilomar Conference were really inspired only by noble motives, especially if one recalls what took place in later years. It is hard to give a definite answer to this question. Indeed, in the modern world where the political and ideological struggle has become extremely intensive there is perhaps no problem, movement or action that could not be under suitable conditions used by the reactionary social forces, and hence even the noblest and most humane intentions are often distorted and exploited for absolutely alien purposes.

However, noting the negative aspect of the problem under review, we give thereby a definite assessment of the political situation, the actions of governments, the mass media but not of the movement of scientists. One must trust the noble motives of the scientists who initiated the movement for a moratorium on some types of experiments with recombinant DNA molecules. The attitude of these scientists, however, has not been consistent at all times.

A different situation prevails under socialism where alternatives often agonising for scientists and dangerous to mankind are ruled out in principle, because here effective and comrehensive public control is guaranteed over scientific, including genetic, research. Academician A. Bayev, a leading Soviet specialist in genetic engineering, said in one of his articles: "We in the Soviet Union are neither scared of the future nor apprehensive lest some powerful and blind forces direct genetic engineering research to the path of evil in defiance of the intentions and desires of men. We are convinced that common sense and goodwill will triumph in this field, at least in our socialist country." [8]

By contrast, under capitalism the socio-ethical regulation of science, whose necessity is realised ever more clearly and is

developed to a certain extent, encounters formidable obstacles caused by private property relations, the egoistic chase after profits inadequately limited by social institutions. Therefore, many Western scientists raise only the question of *self-regulation* of science with emphasis on the purely moral aspect of the matter, permitting no "external control" or legislative regulation. This solution of the problem is based on scientists' distrust of the government agencies in the capitalist countries, since they are clearly aware of how this external control may suppress the freedom of research, while absolving individual scientists from responsibility for the inhuman application of research results.

Socialism sets the stage for a fundamental harmony between the scientific and humanistic aspirations of scientists, for a dialectical interconnection between freedom of research, which is guaranteed constitutionally, legislatively, and their social responsibility. This, of course, does not completely do away with the contradictions and problems involved in the application of these principles. There is no justification for attempts to interpret them on the assumption that "the phenomenon of Lysenkoism", etc., of which so much is written in the West, is fatally inevitable under socialism. Such phenomena do not ensure from the nature of socialism. What is more, they are in conflict with it, and although they really were in evidence at a certain stage of historical development, it should not be forgotten that we ourselves denounced and discarded them.

Thus, contradictions and problems that appear in science under socialism are rationally resolved in the end for the benefit of scientific research and society as a whole. Under such conditions the harmony between scientific and social goals and means affords unlimited opportunities for scientific (in particular, genetic) studies of man. However, their progress can be only gradual, in proportion to the moulding of a new man, the advancement of his cultural standards and self-awareness, in particular, in the social and ethical fields, in day-to-day life, in family relations, etc.

Socialist society, its philosophy and morals rule out the use of manipulatory approaches to man connected, in particular, with the application of methods of genetic control as well. On this basis the socialist countries are developing cooperation in the field of biological and medical studies of man with all countries. Aware of the danger of a lack of control in this field, as well as of the global character of many problems arising here, the socialist countries are party to many international agreements on the regulation of scientific studies of man. They are waging an active struggle to prevent the possible military application of the results of this research, for a ban on development of biological means of

warfare, a weapon even more formidable than atomic weapons, which allows in principle the use of methods of genetic engineering.

Summing up, an important conclusion, as it seems to me, can be formulated: in modern science socio-ethical problems arise both in relation to each individual scientific discovery, an individual research task, and in relation to the aims of science in general. Therefore, the current debates on the problems of regulation of research into genetic engineering cannot be regarded as something transient and accidental to the development of science. They are becoming an inalienable component of scientific activity, which is evidence of a new stage in the progress of science, an enhancement of its role in the life of society and every human being.

It stands to reason that the critical socio-ethical problems connected with the prospects of genetic engineering research can and must be resolved on a broad humanistic basis implying the priority of man's benefit, although it is, unfortunately, defined very uncertainly and vaguely much too often. At the same time, this solution should not obstruct new paths in the study of nature, which, in the final analysis, also serves man's benefit as one of his main hopes for the future. Science and mankind must, however, advance to a new stage in their social and ethical development for this hope to come true.

Therefore, greater attention should be paid to the socio-ethical problems of science, which today link science and scientists by thousands of ties with the life of all mankind, making them responsible to an appreciable extent for its destiny and which are by no means simple and easy to solve. It is necessary to have comprehensive scientific discussions, a comparison and competition of ideas, a creative dialogue between scientists holding different philosophical and socio-ethical views.

* * *

The socio-ethical problems of science were comprehensively discussed, as mentioned above, at the 16th World Congress of Philosophy, especially, at the plenary session and in the sections dealing with the "challenge" of biology to philosophy. It should be admitted, that here we again met with many false concepts, in particular, attempts to interpret the problems of ethics and humanism in the spirit of sociobiologism. I have already had occasions to point out these tendencies clearly expressed, in particular, in the work *Biology and Ethics*,[9] which, as it transpired, came to be the source of many analogous interpretations in later

years. A similar approach was advocated by Wilson in the above-mentioned book *Sociobiology*.

In his opinion, altruism should be regarded from the viewpoint of a species. It is alleged by many that the notion of natural selection making the basis of evolution is contradicted by the existence of altruism in the animal kingdom. Wilson disagrees with this and presents his objections. To the question of how altruism, which by definition contradicts individual adaptation, could arise and develop in the process of natural selection, he answers: kinship. If the genes conditioning altruism are characteristic of two organisms in consequence of their common position and if an act of altruism enhances and multiplies the joint contribution of these genes to the next generation, the propensity to altruism will extend, in his opinion, to the entire gene pool. Wilson goes on to substantiate the proposition that in the complicated process of evolution, the hypothalamic-limbic complex in higher animals brings into play, as it were, an effective mixture of the principles of individual survival, reproduction, and altruism. Complex relationships arise between the individual and the species, which results in the latter's survival and preservation.

The foundations for this approach to the problem of altruism and its origination were formulated in 1964 by the British biologist William Hamilton, who assumed that this is a quality—formed through biological evolution—assisting the individual in the propagation of its genes. Thus, altruism is defined, in effect, as genetic egoism. In this way Hamilton explains, in particular, the social life of insects. In all species of ants, bees, and wasps the daughters of one queen have three quarters of their genes in common on the average. Since these daughters are interlinked by closer ties of affinity than their progeny they are genetically interested, Hamilton presumes, in aiding the queen procreating new daughters rather than in reproduction. This is how females—sterile workers cooperating within their community by virtue of common genetic egoistic reasons—come into being.

The biologist R. Trivers of Harvard University had developed these ideas in his concept of mutual altruism, which explains, for example, why some birds give a warning call of danger to the whole flock even when it does not contain their young or near relations. This is true, he maintains, of all organisms. It is senseless, in his opinion, to believe therefore, that human beings are the only species in which altruism has no genetic roots.

This concept has become the foundation of foundations of sociobiology, and Wilson extends it not only to altruism but also to other ethical phenomena. He declares that now both the naturalists and the humanists can jointly decide whether it is time ethics be taken away from the philosophers and biologised. He

argues that ethical philosophers intuitively understand the deontological canons and rules of morality by consulting the emotive centres of their own hypothalamic-limbic system. This is also true of the developmentalists. Only by interpreting the activity of the emotive centres as a biological adaptation can the meaning of the ethical canons be deciphered.[10] He goes on to discuss his allegation in the language of biological research. He maintains essentially that ethics as a branch of philosophy, closest to biology and linked with it by a common destiny, as it were, cannot be constructed by purely logical, intellectual means, because it is connected with interpretation of human behaviour, but this phenomenon is deeply rooted in the biological evolution of man and other primates and, viewed from the aspect, say, of altruism, even goes back to the history of the invertebrates.

Therefore, Wilson asserts, ethics as a science must be put and constructed on a biological foundation, but for this it should yet be "taken away" from the philosophers. It remains uncertain, at the same time, why many of the principles of ethics cannot be studied in the existing stage of its objective development by society (as the sum total of the rules of conduct) and by scientists (as philosophical and world-outlook systems) and why biogenetic research cannot be pursued as an adjunct to philosophy or as an independent, if only totally different, form or "model" of analysing the problems of ethics and primarily its genesis.

Essentially similar ideas are also developed in those concepts which appeal to "evolutional humanism" (J. Huxley) or simply to a certain abstract "ethics of science" (J. Monod) not evolved, allegedly, from social reality but existing as a possibility somewhere at the level of genetic structures or a priori forms of consciousness. This largely explains why scientists holding such views regard, for instance, the dilemma of science and morality as insoluble, as it was alleged by Stent in his report on "Science and Morality as Complementary Aspects of Reason" at the 16th World Congress of Philosophy.[11]

Stent's interpretation is connected with an aspect investigated by Kant in his time: the rational foundation of morality. Morality and science have a common basis: human reason. Because of the paradoxicalness of human intelligence morality and science are correlated through a fundamental similarity: the internal inconsistencies and mutual incompatibility. The internal inconsistencies do not interfere with the construction of a superficially coherent picture of reality so as to work out a rational line of behaviour in every-day life. They come to the surface only when scientists and philosophers go too far into detail in their analysis. The inconsistencies and uncertainties revealed can be disposed of only by altering some basic intuitive postulates of the world. Such

alterations may produce local coherence, but will cause grave damage to cognition, since they will contribute to man's alienation from the reality he builds in his every-day life.

Stent attempted to substantiate these ideas by alluding to numerous sources related to the past and present of science and philosophy. In his arguments he attached special importance to the ideas of N. Bohr, in particular, the notion of complementarity called upon to harmonise the physicists' conflicting views of the discoveries in quantum physics. Later, the content of this notion was widened and today, Stent maintains, it constitutes the general theory of the nature of human knowledge. The notion of "complementarity" covers three interlinked as well as essentially different aspects: the instrumental, the metaphysical, and the intuitive.

The intuitive aspect of this notion, which is directly connected with the theme of the relationship between science and ethics, appeals to the nature of human intelligence. The epistemological concepts, Stent alleges, referring to works by J. Piaget, arise automatically in infancy in every normal individual as a result of dialectical interrelationship between the developing nervous system and the physical world. Consequently, these notions are not a product of culture, not to speak of the doctrines of idealistic philosophy; they are truly intuitive; to construct them means to be growing up into a normal human being.

In Stent's opinion, the scientific view of the world through which we construct and attempt to understand the reality of objects governing causal relationships is but one of the two aspects of global intuitive ideology which helps us gain all our experience. The other aspect is the ethical approach which helps construct norms of interpersonal relations between real human subjects. This global ideology has a multitude of concrete expressions, both religious and secular. In most cases, however, the difference between the scientific and the ethical approaches is either overlooked or deliberately rejected. As a result, global ideology becomes relatively free both from internal conflicts and from conflicts between science and ethics, which prevents the development of science as autonomous intellectual activity, erecting thereby an insurmountable obstable to understanding and controlling the world of objects. According to Stent, contradictions and conflicts are an example of paradoxicalness inherent in rationality; the intuitive notions underlying the ethical approach include a number of intuitive conjectures, which creates a picture of reality characterised by internal inconsistency and incompatible with the picture formed on the basis of a scientific approach. Physicists and mathematicians have revealed the conjectures concealed in our notions of time, causality, etc. In the same way, philosophers

concerned with the problems of morality were to explain the conjectures embodied in our notions of morality. These investigations, Stent believes, corroborate the Kantian philosophy of morality: our ethical approach to the world reflects what is biologically given rather than what is socially and philosophically conditioned. Consequently, the moral principles are intrinsic to intelligence, and their formation means the conversion of a child into a normal adult.

Stent further poses this question: What is the solution to the paradoxes arising from the intuitive complementarity of human intelligence? Following Bohr, he proposes in this connection recourse to Oriental philosophy.

Finally, Stent draws the following conclusion. A human being endowed with intelligence since infancy can suppress it, overcoming thereby agonising paradoxes in his position which issue from rationality; this precocious freedom from conflicts, however, will apparently be won at an exorbitant price—the destruction of the foundations of ethics and science.

It should be admitted that views similar to Stent's are widely current in the West, among scientists in particular. Objecting to them, the Marxists say that the dilemma of science and morality can be resolved by scientific means without recourse to Oriental mystical intuitive beliefs, and that such a solution, far from contradicting the traditions of Western culture, on the contrary, organically derives from them. These traditions (of world rather than European, or Oriental, or other culture) have been inherited and developed by Marxism, which proceeds from the fundamental harmony and unity between scientific research and humanistic ideals. This means, at the same time, the unity of the social goals of scientific cognition and the ethical values of humanity, which also have man's benefit as their starting point. It should be re-emphasised that such unity of scientific research and humanistic ideals, the social goals of cognition and the ethical values of humanity exists, of course, only as a principle and perspective of genuine science. Actually, however, science in its modern forms, as we know, is often yet very far from this.

Nevertheless, we must always bear in mind that organic combination of science and humanism, the assertion of science as a force serving the progress of mankind is one of the most vital problems of modern development. Awareness of this fact helps one to make a better assessment of scientific research and its results in ethical terms and, consequently, to overcome ethical relativism and nihilism dangerous to mankind, which consist in appealing to "boundlessness" and "inevitability" of cognition alleged to be the supreme criterion of its human essence, the self-sufficing source of the ethical values of science. It is becoming

clear that it is no longer enough for scientists to wave "the flag of Galileo", that science has become a force whose handling requires great responsibility.

It will be recalled that the 18th UNESCO General Conference Session on November 20, 1974 adopted a special recommendation concerning the condition of research workers. Among the fundamental ethical and civic principles scientific workers in any state ought to remember and follow the recommendation indicated: intellectual freedom to search for, express and defend scientific truth as they see it; participation in formulating the goals and the guidelines of the programmes they pursue, the methods that should be adopted on the humanistic, social, or ecological aspects of definite projects and the possibility to withdraw from these projects if their consequences compel them to take this step; the duty to contribute to the progress of science, culture, and education in their own country, guided not only by the need to solve the national problems, but also by the international ideals of the United Nations.

The increased self-awareness of scientists today is expressed in a variety of forms. It is consistently expressed, in particular, in the Pugwash Movement initiated by the famous manifesto of Russel-Einstein. The 28th Pugwash Conference held in Varna, Bulgaria, in 1978, re-emphasised that in addition to their individual responsibility for scientific research a special responsibility devolves on scientists in view of their competence, technical possibilities, and international ties. In their respective countries scientists ought to disseminate authentic information about such facts as the consequences of the use of modern weapons; the implications of industrial growth, urbanisation of the development of agriculture and social structures; the situation in the field of available resources necessary for mankind's future development, as well as alternatives to the utilisation of these resources, their advantages and disadvantages. These activities of scientists implying strong ties between them and political leaders, their socio-political activities are necessary, as it is stated in a declaration of the Pugwash Council, for eradicating misunderstanding, ignorance, and hate and thereby for preserving international peace.

One cannot but recall in this connection the wise idea expressed by the great humanist Albert Schweitzer who said that ethics means infinite responsibility for all living things; the ethics of veneration of life (human life, first and foremost) reposes great hopes in enhancement of man's sense of responsibility. "The ideal of a cultured person," he wrote, "is nothing but the ideal of a human being who remains truly humane in any situation."[12]

Man has developed and is developing science unlimitedly. But does it make him more perfect and happier? This is a

philosophical and a profoundly practical question that should be answered bearing in mind not only a distant perspective. However, a correct answer here is impossible outside the correlation of science and humanistic ideals. It is only a constant humanistic *assessment* of science from the angle of its capacity to *benefit* man, subordination of its immanent goals to the common goal of mankind's social development in the direction of communism that, as I am profoundly convinced, lays the solid foundation for the unlimited progress of science itself.

This genuine humanism as a real movement and as a world outlook and ethical principle, which is an alternative to fanaticism, rigorism and spiritual sectarianism, is increasingly gaining ground as a global phenomenon common to all mankind. However, its historical source and actual being are in the concrete form associated with the tradition of Marxism, the practices and prospects of socialism and communism. The real humanism of Marxism and communism on a scientific plane is embodied in the ability for a dialogue proceeding from a recognition of the objective contradictions of cognition, for discussions which are the permanent state of creative scientific thought. It lays thereby the foundation for the ethics of science which organically combines the freedom of scientific quests with the growing responsibility of scientists in the cognition of life and man.

NOTES

[1] V. I. Lenin, *Collected Works*, Moscow, Vol. 14, p. 329.

[2] R. Ardrey, *The Territorial Imperative. A Personal Inquiry into the Animal Origins of Property and Nations*, New York, 1966, p. 103.

[3] For greater detail, see my article in the journal *Kommunist*, No. 3, 1974.

[4] E. Fromm, *Sane Society*, London, 1968, p. 14.

[5] A detailed critical review of modern biologism is presented in a book by the Austrian Marxist philosopher W. Hollitscher, *Kain oder Prometheus? Zur Kritik des Zeitgenössichen Biologismus*, Berlin, 1972. See also a collective work of Soviet and Czechoslovak scientists, *Social Philosophy of the Frankfort School. Critical Essays*, Moscow, 1975 (in Russian).

[6] Edward O. Wilson, *Sociobiology. The New Synthesis*, Cambridge, Mass., 1975.

[7] In the last few years I have discussed these problems in a number of my articles and books, which have furnished the basis for the present article. See, for example: "Modern Science and Humanism", *Voprosy filosofii*, No. 3, 1973; *Progress of Science and Man's Future*, Moscow, 1975 (in Russian); "Man of the Future" (Criticism of Modern Social Biologism and Neo-Eugenics; The Socio-ethical Problems of Genetic Engineering), *Voprosy filosofii*, Nos. 7 and 8, 1975, (jointly with S. A. Pastushny) *Mendelism and Philosophical Problems of Modern Genetics*, Moscow, 1976 (in Russian); "Men-Genetics-Ethics", *Dialectics and Humanism*, No. 3-4, 1976; "The Possibilities and Dangers of Genetic Engineering", Collection *The Future of Science*, Moscow, 1977 (in Russian); "Bemerkungen zur Ethik und Erkenntnis", *Deutsche Zeitschrift für Philosophie*, No. 7, 1977; "The Socio-Ethical Control of Scientific Research", Collection *Dialectical Materialism and Modern Science*, Prague, 1978.

[8] A. A. Bayev, "The Social Aspects of Genetic Engineering", Collection *The Battle of Philosophical Ideas in Modern Natural Science*, Moscow, 1977, p. 146 (in Russian).

[9] *Biology and Ethics*, London-New York, 1969.

[10] Edward O. Wilson, op. cit., p. 563.

[11] A more detailed review of Stent's philosophical views is to be found in G. S. Stent "The Dilemma of Science and Morals", *Genetics*, September, 1974, Vol. 78, No. 1, pp. 41-51; See also Herbert Hörz, "Humangenetik und Individualität (Bemerkungen zu den philosophischen Auffassungen des Molekularbiologen Gunter Stent)", *Wissenschaftliche Zeitschrift Friedrich-Schiller-Universität*, Jena, 1977, Issue 5. I. T. Frolov, "On the Dialectics and Ethics of Biological Research (For the Discussion of Modern Biology and its Challenge to Philosophy)", *Voprosy filosofii*, No. 7, 1978.

[12] Albert Schweitzer, *Kultur und Ethik*, Munich, 1960, p. 358.

The Languages of the World— A Linguistic Encyclopaedia

VICTORIA YARTSEVA

From the Editors: Increasing contacts between peoples of different countries today enhance the importance of the study of the languages spoken by the world's peoples. However, there are no uniform principles of classification to date which would cover all the languages that now exist in the world. To elaborate such principles and on their basis to compile an encyclopaedia of languages, *The Languages of the World*, is a task which scientists at the Institute of Linguistics of the USSR Academy of Sciences have undertaken. Below is a paper on this subject presented by Victoria Yartseva, Corresponding Member of the USSR Academy of Sciences, at a meeting of the Academy's Presidium.

In compiling the linguistic encyclopaedia, *The Languages of the World*, the first question that arises is how many languages should be taken into consideration. The point is that the numerical distribution of people speaking different languages is extremely uneven. There are no more than 13 languages in the world, each of which is spoken by more than 50 million people. But the total number of languages that exist in the world is very large. For the linguist, however, there are no "big" or "small" languages. When noting the differences in the social and functional status of the world's languages, he must give careful consideration to any one of them, since for each people their language is not only a means of communication, but also an embodiment of national and cultural values. Linguistic data are thus also important additional material in ethnological studies.

Now, how many languages are there in the world? So far we have no precise answer to this question. The number given in different reference books varies from 5,000 to 8,000. This discrepancy is explained by the fact that for many regions of the

world there are yet no reliable registers and descriptions of the languages spoken there. The head of the Department of Linguistics of the Research School of Pacific Studies in Australia, Stephen Wurm, has noted that any project of describing the languages of the South-West Pacific area (especially the regions of New Guinea, Australia and Melanesia) comes up against considerable difficulties owing, first, to their large number—nearly 1,400 (of which about 1,000 are in the region of New Guinea), and, secondly, to the total, or almost total, absence of satisfactory descriptions of many of these languages.

Large-scale work is now under way to compile a discription of the languages of Australia (including Tasmania), where about 260 languages have been identified according to attributes of genetic and typological affiliation. Many of these languages are undoubtedly cognate or very similar with respect to grammar and typology, although substantial lexical differences have been found among them. Thanks to their typological resemblance it is possible, in a linguistic encyclopaedia, to give a description of such a group of languages when describing one of the languages—the "representative" of the entire group. If, on the other hand, we turn to the so-called Austronesian languages (or the languages of Melanesia), which are spoken over a wide area extending from the Solomon Islands in the northwest to New Caledonia in the south, including Fiji, we will find that they have been very little studied. We don't even know just how many languages there are in that area; the number will probably come to 300.

Extremely varied with respect to linguistic features are the Papuan languages of Oceania (i.e., the region of New Guinea and several adjacent islands). So far more than 650 languages have been recorded there, and probably at least 150 more Papuan languages will be found by linguists, mainly in Western Irian. Apparently all of them are genetically connected with one another, but there are still insufficient data for determining the prototype and writing a comparative grammar of these languages. Typological parallels among the group of Papuan languages can probably be found although undoubtedly they will be less pronounced than, for example, those among the Australian languages.

Matters stand about the same with regard to the languages of the Indians in South America. Whereas the grammar of the languages of the indigenous people of North America has been thoroughly worked out and the genetic links between these languages well studied, in South America the absence of study of linguistic materials makes it impossible even to determine the number of languages spoken there and to differentiate between languages and dialects.

This problem of deciding whether a type of speech being studied should be considered a language or a dialect of a language, is in many instances a subject of constant discussion.

A good many example of the difficulty in deciding the language-dialect question is provided by the Iranian languages (or dialects?) in the Pamirs region. There is no agreement among specialists in Iranian philology on this question. Thus, the Soviet linguist V. Sokolova says that the Shughni-Roshani group of languages taken as a whole unites several similar linguistic varieties: the Shughni variety (spoken by 35,000 to 40,000 people), the Roshani variety (spoken by about 15,000 people), the Xufi variety (spoken by 1,000 to 1,500 people), the Bartangi variety (spoken by 3,000 to 4,000 people), the Oroshori variety (spoken by 1,500 to 2,000 people), and the Sarikoli variety (spoken by about 5,000 people). Their similarity is such that one can easily assume that people who speak one of them can understand those who speak the others. In this sense the languages spoken by the Shughni, Roshani, Xufi, Bartangi, Oroshori and Sarikoli may be considered to be one language and its varieties to be dialects. However, as Sokolova shows further, there is no one name for designating all the ethnic groups, which do not form a single nationality, and accordingly there is no one language for which each of the aforesaid varieties would be a dialect of the territory inhabited by the given ethnic group, since these dialects-languages are equally valid and independent.[1]

But perhaps these difficulties can be avoided, let us say, by including in linguistic works of an encyclopaedic nature only those languages which have been well studied and which are widely spoken. The matter is not quite so simple, however. Very often the "small" languages are of exceptional importance for understanding the connections between cognate languages, representing as they do the missing intermediate links in major genetic units. Essentially the same problem faces us when we have to decide whether to include in our encyclopaedia the dead languages, i.e., languages that are not used for communicative purposes by peoples today.

It may seem at first that we should limit our description to languages that exist today and exclude those that have ceased to exist. In many instances, however, without taking into account dead languages it would be difficult, and sometimes impossible, to have a genealogical classification of the living languages. For example, to give a complete description of the group of Baltic languages, to which present-day Lithuanian and Lettish belong, it is necessary to include Old Prussian which had belonged to this group and which ceased to exist about 300 years ago. Now, if languages that are spoken by a small number of people, and

languages that have ceased to exist, can nevertheless be very important for understanding the structure of big linguistic units, then the reverse should also be true: namely, problems related to languages that lack a sufficient volume of its own material accessible to scientific observation may be elucidated when they are compared with other languages belonging to the same genetic group. In this way the materials pertaining to one language are filled out, as it were, by materials of another language. That is why the historico-comparative method and genealogical classification of languages, which appeared at the beginning of the 19th century, have remained in use to this day. Thorough research not only has made it possible to outline the big linguistic groupings of languages, but has also led to attempts to establish the connections between individual language families, although there are languages whose genetic connections have not yet been ascertained. For example, Ainu, the language spoken by a 20,000-strong people inhabiting several Japanese islands, and Ket, which is spoken in one of the regions of the Krasnoyarsk Territory (East Siberia), have no tangible connections with the other languages of the world.

If the dead languages are to be discarded in a description of languages, new difficulties and problems will arise. For then one must answer the question which languages are to be considered dead, and what attitude one should take towards those languages which like Old English or Old Icelandic, have their own historical continuation today. Where is that measure with the help of which we can conclude that in one instance, say, a modern language is a direct continuation of an old language, and in another instance there is a complete break in linguistic tradition and the languages that had ceased to exist had had no influence whatever on the languages that have replaced them on the territory where they were spoken at one time? We all know that Latin of the epoch of the Roman Empire, which extended over a vast territory, formed the basis of such modern languages as French, Spanish, Portuguese, Italian and other Romance languages which differ considerably from one another but which nevertheless preserve certain common inherited features.

Unquestionably, we come up against additional difficulties when working with dead languages, for the information here is one-sided and often incomplete. To restore the phonetics of a language by using only literary monuments raises doubt as to the correctness of the interpretation of the "sign-sound" connection. The volume of extant documents written in dead languages can also vary greatly: for example, the literature written in such languages as ancient Greek or Latin is extremely rich, while for many other dead languages the only evidence that they existed is

provided by a small number of inscriptions found on tombstones or ritualistic inscriptions. But owing to the cognitive value of the historical material preserved in dead languages it is impossible to exclude them from works of an encyclopaedic scope.

A serious problem in a description of the world's languages is presented by pidgin and Creole languages which historically represent the result of a mixing and interaction of genetically dissimilar languages. These language-types do not merely function as "second" languages; in some regions they are also the official (i.e., state) languages. An example is the English-based pidgin used in New Guinea. New Guinean Pidgin is rapidly becoming not only a *lingua franca*, but also a language commanding considerable authority. It is used in the National Assembly, in administrative bodies, in the press and in radio broadcasting and it is widely used in primary education.

The number of pidgin and Creole languages is large and they are spoken in many regions. Thus *A Bibliography of Pidgin and Creole Languages* (1975), compiled by a team of linguists in Honolulu, includes more than 8,000 works on the use of these languages in 100 regions. Descriptions of Creole languages usually proceed from their genetic base—English, French, Spanish, Dutch, Portuguese, etc. But here the "proportion" of elements of different languages varies considerably, and therefore it would be impossible to link Creole and pidgin languages to the languages on which they are based. The distribution and functioning of Creole and pidgin languages depend on the peculiarity of the specific areas where they are widely spoken and on the history of these areas. Melanesian Pidgin (English-based) is spoken by at least 800,000 people, including 500,000 in northeastern New Guinea, or one-third of the population. It is necessary to point out that the area in which Melanesian Pidgin is widely spoken is one of the most "mixed" areas linguistically (there are 1,000 Melanesian and Papuan languages and dialects).

What has been said above leads us to the conclusion that in an encyclopaedic work it is necessary to describe all known languages, both modern and dead, and not only those which serve as national literary languages, but also the "small" analphabetic languages which could not develop their communicative functions owing to historical circumstances surrounding the development of the peoples that spoke these languages.

* * *

Even in the process of preliminary gathering of materials on languages that had at one time existed, the linguist has to deal with factual data which differ widely in volume and character. At

one pole there are the modern languages with many centuries of written tradition behind it and a rich literature (Russian, Japanese, Georgian and many others), and at the other pole there are the numerous analphabetic languages of Asia, Africa, Australia and Oceania, and the languages of the indigenous inhabitants of South and North America which have only a folklore literature and about the history of which (or some of which) there is scanty material consisting of fragmentary notes of travellers. Finally, new difficulties arise in studying dead languages from which certain words had descended that are found here and there in the writings of old Greek and Latin authors, or in which a small number of inscriptions were written (some not completely deciphered) that have come down to us. Clearly, the fragmentary nature of these materials immediately raises the question of methodology of linguistic description and of the use in such description of a scheme which could serve as a basis for a comparative study of the languages.

Complexity of structure, a large number of attributes or features and their different character are typical for language as a phenomenon of reality. The plane of expression is opposed to the plane of content, but the models for the former are distributed according to different levels of language structure. The borderlines and correlation of these levels—the phonetic, grammatical, and lexical levels—are different for different languages. This is clearly seen in a comparison of languages, for the units of a certain level in the given language may not have their equivalents within the limits of the same level in another language. Even when there is a purely external coincidence of units of one and the same level in different languages, a detailed examination of these units will disclose important divergences in the volume of meanings transmitted. This can be illustrated by the simplest of examples.

In the lexicon of the Russian language the word *derevo* means both "tree" and the material made from it (such as mahogany, and so on). The French word *arbre*, the German *Baum* and the English *tree* are used only to indicate "tree"; for the material made from tree the French word is *bois*, the German—*Holz*, and the English—*wood*. However, *bois* means "forest"—a mass of trees—with the parallel synonym *forêt*. But whereas *bois* (sometimes for the sake of precision also *bois de construction* and *bois de charpente*) can be used in the same sense as the Russian *stroitelnyi les* (timber), in English there are two different words for the two objects—*wood* meaning forest (a mass of trees), and *timber* (the Russian *stroitelnyi les*). The German *Wald* as a mass of trees does not have the meaning of the material made from tree, which is indicated by the word *Bauholz* (meaning timber). Also, in Russian there is the word *drova* (firewood), for which there are no

corresponding words in French, German or English; the French word for *drova* is *bois* (sometimes for the sake of precision also *bois de chauffage*), the German—*Holz*, and the English—*wood*.

If in the narrow notional sphere there exist so many divergences for relatively similar languages, we can conceive of the difficulties that must arise in an analysis of the lexical material of diverse languages of the world. Language is many-faceted. This gives it flexibility and makes it suitable for purposes of communication. This also confronts the linguist engaged in writing a comparative description of languages with great difficulties.

One of the main questions that arise in describing the world's languages is the question of finding the criteria of their commensurability. Although language classification and description of languages are not one and the same thing, in order to write a scientific description of languages it is necessary to seek and establish a uniform measure with the help of which one can compare and classify languages. A rational classification of languages should cover all the material being analysed. Here the question is: should one take as a basis of classification one attribute or several attributes, and if several, which should they be? It would seem that one can avoid coping with the complexities and the contradictory nature of the material being classified by selecting any one attribute. There have been many attempts to classify all languages on the basis of one feature which is present in all languages. But this kind of procedure is hampered by the heterogeneous character of language system. Any classification involves comparison, and only things can be compared which are in some ways comparable. Therefore a uniform scheme of comparison calls for a study of the resemblances of the objects being classified with respect to something which is present in them to an equal extent.

In linguistics, word structure often serves as the starting point for language classification, and the typological (or morphological) classification with division of languages into root (isolating), agglutinative and inflectional languages is accepted up to the present time. In the first type, a word taken separately carries within itself no indicators of grammatical relationships. The Chinese *fuhe* equally denotes the noun "correspondence" and the verb "to correspond". In the agglutinative languages, monosemantic affixes, joined to the root, impart to the word all the necessary grammatical meanings. For example, the Turkish *evlerinde* ("in his houses") has the constituents *ev*—"house", *ler*—affix forming the plural of a noun, *i*—affix indicating third person singular, and *nde*—affix indicating locative case. In an inflected word, different grammatical meanings are often synthesised in one affix. For example, the Russian affix *-ami* in the word

sadami expresses the meanings of substantive, plural number and prepositional case.

Different division in languages being compared of one and the same notional sphere is often cited as an example of typological divergence of languages. The category of personal pronouns is apparently universal. In a study carried out for the Stanford project on language universals, David Ingram (1971), on the basis of an analysis of different languages, establishes that the predominant system consists of three persons (I, you, he) in two numerical measurements, i.e., singular and plural.

In Forchheimer's work (1953), in which 71 languages are investigated, 19 are found to have the six-member person system (3 singular+3 plural). Modern English became atypical after the early form *thou* dropped out of the system and the form *you* came to be used as both second person singular and second person plural. The six-member pronoun scheme is found in languages which are very different from one another with respect to other linguistic characteristics. The scheme is found, for example, in Latin, Chinese, Finnish, and Hausa. There are practically no personal-pronoun systems that have less than four members. The exceptions, out of the 71 languages studied, are Korean and Kamanugu, in which there is no differentiation between the plural forms.

How does the increase in the number of members of the personal-pronoun system come about? The concretisation of number takes place through the introduction of special forms of dual person number and the bringing in of the concept of inclusive and exclusive. If we take an extreme case—the 15-member system which is found in only two out of the 71 languages investigated, Nogogu and Worora—the increase in the number is due to the presence not only of dual person number but also of trial person number for all three persons and of inclusive-exclusive forms for the first person ("I", "the two of us including...", "the two of us excluding...", "the three of us including...", and so on). The intermediate systems are relatively numerous; thus, for example, 15 out of the 71 languages investigated have an 11-member personal-pronoun system. But again, it is represented typologically by languages that are not widely spoken: Chinook and Bongu.

What kind of problems does this pose for us? Despite the diversity of material and the seeming complexity of individual personal-pronoun system as shown above, no real difficulty arises here in a comparison of languages, because the commensurability of the systems is obvious, and it is only a question of degree of ramification within the limits of one scheme.

Real difficulties arise when, owing to specific features of individual elements belonging to different levels of a language, it becomes necessary to reconstruct the scheme itself for the purpose of converting adequate notional content within the limits of a scheme that is peculiar to another language. Thus, for example, certain lexical-semantic properties of individual categories of verbs in languages of the ergative structure make it extremely difficult to collate the grammatical schemes of a sentence in the ergative languages and languages with a different structure.

It may seem strange at first that in the centuries of its existence the science of linguistics has not reached a stage where questions of what to describe and how would not arise. As a matter of fact, the questions are not idle ones. Obviously, the completeness of a description of the world's languages will depend on the degree of completeness and adequacy of description of individual languages. Now, what does this imply?

Traditionally it is believed that an analysis of the phonetic, grammatical and lexical aspects of a language (and sometimes also an additional parsing of a sample of the text) provides sufficient material for an understanding of the essence of the given language. The bringing in of analogous facts from other languages, and an analysis of the functioning of observed linguistic elements in speech (spoken or written) with the use of the descriptive method, are often regarded as a desirable but not an absolutely necessary component of research. It is clear, however, that there is a direct relationship between linguistic theory and linguistic description, and it is an effective theory, one which is adequate to the material being investigated and whose adequacy has been verified by practice, that ensures fruitful research. Moreover, as the Soviet linguist B. Serebrennikov has pointed out in his essay included in the monograph *Principles of Description of the World's Languages* published in 1976 in Moscow in Russian, the aim of research, or what the author calls the "intention of description" presupposes, in its turn, a specific method of analysis of the gathered material with account taken of the distinctive features of the material. The question of completeness of description within the limits of task undertaken is, therefore, of vital importance.

It seems to us that we should take as the basis for classification the essential characteristics of a language, that which constitutes the specific features of language as a phenomenon. If any particular attribute is used as a basis for language classification, an attribute which is present in many languages but which nevertheless does not reflect the specific features of human speech, this will inevitably prove inadequate at further stages of research, and the classification itself will turn out to be unfounded.

An essential characteristic of this kind can be a content-rich category which is connected with forms of cognition and reflection of the objective world and which is consistently expressed by a system of linguistic forms. That is precisely why a concept that is communicated by grammatical forms in the world's languages stands out as a universal relation which is interpreted differently in different languages but which is equally expressed in them; and it can be taken as a basis for study against the background of affinity of differences in the languages being compared.

* * *

The means of expressing similar concepts can be very different in different languages. The degree of detailing of one and the same concept can also vary considerably. It should be remembered that in individual languages much detailing is observed with regard to aspects. For example, in Eskimo the following characteristics of the mode of action are found: 1) the beginning or actualisation of an action; 2) limited action; 3) unlimited action; 4) once-performed action; 5) permanent (usual) action; 6) action performed many times; 7) phased action; 8) repeated interrupted action; 9) durative; 10) accelerated action; 11) slowed-down action; 12) rarely performed action; 13) repeated action (iterative); 14) action performed more than once; 15) weak action; 16) action that almost took place; 17) nearly completed; 18) action that is ending; 19) at last achieved action; 20) calm action. All these aspects of verbal action are expressed grammatically by means of special suffixes.

When we are undertaking a thorough study of languages, an impression is formed that there is an infinite variety of them. In comparing any two languages it is their differences that first strike us. However, if we build a logically conceivable system of variants of any one concept or idea, it will always prove to be much more polynomial and richer than the system that actually exists in languages. Here two questions arise: How should we give the typology (structure) of the given concept in a language? And how do we find room for all the diversity of logical variants of the given concept in the relatively non-numerous linguistic types?

Of late linguists in many countries have been interested in the problem of so-called universals, or patterns that are common to all languages or to an absolute majority of the world's languages. The problem is not a new one. It has been dealt with from various aspects and from different points of view throughout the history of linguistics. But whereas Cartesian grammar postulated the presence of universal laws of logic reflected in language, modern

linguists proceed mainly from types of language structures, and that is why works dealing with language universals often involve typological research.

The US scholar Edward Sapir, using as an example the sentence "A farmer kills a duckling", shows that many meanings implicit in one language are not necessarily expressed in another language. For example, the category of diminutiveness (duck-duckling, in Russian *utka-utenok*) does not exist in the Chinese language. In the Indian language of Kwakiutl, on the other hand, it would have been necessary in the given sentence to express, in addition, whether the duckling belongs to the farmer who kills it or to another farmer, and where the farmer who kills the duckling is, whether he is visible, and so on. In other words there is a mass of details of meaning which are built in the structure of one language but which may be completely ignored in another language. However, in any language, the relationship between the subject and object of an action is clear. There is no language, as Sapir wittily observes, in which one can avoid answering the question of who kills whom.

Although the linguist who is engaged in a description of the world's languages is necessarily dealing with languages that differ from one another in structure and genetic affiliation, the correctness of his interpretation will depend on his philosophical understanding of the essence of language as a specific attribute of human society. The theoretical and methodological principles of the Marxist concept of language, elaborated in Soviet linguistics, will serve as the basis of the work which we are now preparing, and they will be embodied in concrete descriptions of individual languages of the world. This is what will distinguish *The Languages of the World*, to be published in the Soviet Union, from similar encyclopaedias and reference books published abroad.

The concept of language as a most important means of communication between people in society is reflected in the attention which Soviet linguists in describing languages, pay to their socio-stylistic differences in connection with the functional peculiarities of their use in different social conditions (the literary, written national languages; languages functioning in conditions of bilingualism within a limited sphere of their use; languages acquiring the status of state languages in countries liberated from colonial dependence, etc.).

The Marxist concept of language as "the immediate actuality of thought"[2] requires of a description of individual languages that the interpretation be meaningful and to the point, that a notional approach be used in the analysis of structural types, and that constant attention be paid to the problem of relationship between form and content in languages. The semantics of grammatical and

lexical categories, as revealed through the system of forms in a language, enables us to establish broad categorial relations which indicate the possibilities of the mutual translatability of languages and which describe those distinctive features that are the typological peculiarities of the given group. Although the description of languages in our work will be given in synchronous cross-sections, the concept of language as a historically developing phenomenon will be reflected in the presentation of the material as a system combining elements that are being born and those that are dying off; also productive, in terms of realisation of promising tendencies in the development of the given language, are those elements of language structure which are either relegated to fields of secondary importance or are in the process of change of interpretation and are being assigned new functions and meanings.

Thus, all the important principles of the Marxist science of language will be implicitly present in the description of individual languages, and it is this approach that will ensure unity of our work, theoretical, methodological and philosophical.

In Soviet linguistics much typological research has been done. Typological investigations are conducted on the level of general theory, and they are also applied to the study of individual groups of languages. Besides their general methodological significance, comparative-typological studies are important for solving many problems of a practical nature: translation from one language into another, teaching of language, and so on. As we have tried to show the difficulties facing linguists engaged in the task of describing the world's languages are due to the fact that they are little studied and that the theoretical principles of language classification are not yet fully elaborated. However, the importance of this field of investigation for the theory and practice of language construction is so great that a description of the world's languages should be regarded as one of the foremost tasks of linguistics today.

Most of the works dealing with the world's languages, it seems to us, suffer from a number of shortcomings, such as insufficient coverage of material pertaining to existing languages, absence of consistent principles of language classification (e.g., mixing of genealogical, typological and geographical principles in language classification), methodologically erroneous orientation whereby developed and underdeveloped languages are compared in connection with the political and economic conditions of different countries, and so on. The purpose of our encyclopaedia, *The Languages of the World*, is to give a full description of all known languages on the basis of the achievements of Marxist linguistics and with account taken of the best linguistic studies published in

the world, and thus to serve as a guide not only for linguists but also for specialists in other fields to the intricate world of the languages of our time. Indispensable for the compilation of such an encyclopaedia are the works of Soviet linguists and scholars—theoretical and methodological studies, the numerous descriptions of languages of various regions that are little studied, and multivolume works such as *Languages of the Peoples of the USSR* and *Languages of Asia and Africa.*

The Languages of the World will contain a description of all languages known at the present time, both living and dead. The new, distinctive feature of this work consists in the fullness of material covered—it includes languages to which usually little attention is paid in similar works (in particular, analphabetic languages and languages that have relatively recently acquired an alphabet, both of the Soviet Union), and in the principles employed in describing and classifying languages and language groups. The work will consist of 15 volumes, and preparatory work for publication will begin in 1981.

NOTES

[1] *Languages of the Peoples of the USSR*, Vol. I, Moscow, 1966, p. 362 (in Russian).

[2] Karl Marx and Frederick Engels, *The German Ideology*, Moscow, 1968, p. 503.

Psychological Aspects of Space Flights

BORIS LOMOV

The further exploration of outer space is a major scientific task, claiming the attention of the technical, natural and social sciences.

Originally, during the early space probes, first priority was attached to engineering, physics and mathematics. They coped with the task of developing a spaceship. The next task was to put a living being into orbit round the Earth. So the technical sciences were joined by biology. This faced both engineers and biologists with new technical problems.

The first manned space flight of Yuri Gagarin, which won him the title of Hero of the Soviet Union, opened a new chapter in space exploration. The sciences studying man—first, medicine and biology and later psychology—were incorporated in the space exploration programme. New problems again cropped up and were worked out jointly by engineers, physicians, physiologists and psychologists.

Naturally, it was to be found out how much space conditions would differ from man's habitual environment on earth; how they would affect his perceptions and concentration, memory and thinking, motor coordination and psychic state; what psychic functions may be affected by multiple gravity, weightlessness, long confinement to restricted space, and other factors of space flights.

This required *psychological tests* and research in designing a spaceship, selecting and training cosmonauts, and programming space flights. These requirements tend to grow as man penetrates further and further into outer space.

This research gave birth to a new branch of psychology—space psychology [see Bibliography at the end of this article: 7, 11, 20,

21, 35, 36]. It is developing as an integrated science based on data borrowed from general psychology (theoretical and experimental), aviation, engineering, social psychology, and psycho-physiology.

Just as in any new field of science, much is still unexplored in space psychology. Its problems have so far been defined only in general outline, its principles and methods of research do not yet constitute a neat, coherent system; no "critical mass" of experimental (and, in general, empirical) findings has yet been obtained to provide a solid foundation for the theory of space psychology. This branch of science is still in its formative stage. After some time, however, it will move to a place of importance among other sciences dealing with the long-range tasks of space exploration.

Psychological problems are encountered at all stages of programming and implementing a space venture, ranging from designing a spaceship to its retrieval. Each of them involves a specific range of problems, but all must be combined in a common logically coherent system. Let us list these problems, if only in brief.

1. The *spaceship designing* involves a number of problems concerning the design of cabins, control panels, communication systems, living compartments, as well as the conditions of life and work of the cosmonaut. The construction of a spaceship, just as of any other man-operated machine requires consideration of the human factor already in the design stage. It is a matter of designing not simply a space vehicle but a "cosmonaut-spaceship", i.e., a "man-machine" system. Statistics show that one of the main causes of inadequate design efficiency and safety of "man-machine" systems is inadequate attention in their design and development to adapting technical systems to man. The error, of course, is committed by man, but this human error is found to be incorporated in the technical system itself [6].

Therefore, it is already in the stage of designing and building a spaceship, in determining the size and interior of service and living compartments, in selecting means of information monitoring, control facilities, communication systems, etc., that it is necessary to take into consideration the characteristics and potentialities of man, i.e., the cosmonaut who will live and work in and control the vehicle.

Special attention should be paid to information exchange between man and machine in monitoring and control systems, because information circulation and processing are the basis of any control process. Designing and arrangement of instruments for information monitoring, communication systems, control facilities should rely on clear knowledge of the laws governing the processes of information reception and analysis by man.

The man-machine information exchange is the subject of engineering psychology. Its stock of findings is indisputably of great importance for designing space vehicles. The cosmonaut receives and analyses information in a specific situation. For example, available data indicate that the reactivity of all systems of the human organism changes under the impact of space flight [6, 20, 34, 35, 37]. The cosmonaut has to work in the conditions when his physiological and psychic functions differ from those when on earth. The changes observed, however, are of systemic rather than local character. In other words, any functional change affects other functions one way or other (directly or indirectly). For example, a functional derangement in the vestibular apparatus, which has formed in the process of evolution as a sensitive instrument providing a subjective reflection of the body position in the Earth's gravitational field, affects the functions of other analysors [1, 2, 18]. Hypokinesia and changes in the hydro-saline metabolism influence both the afferent (information reception) and the effector (motion) mechanisms of man's activity. Therefore, in designing, for instance, visual means of information transmission it is necessary to take into account not only the characteristics of the optic analysor and visual perception themselves but also their changes in the conditions of weightlessness. In view of this, data on visual (auditory, or any other) perception obtained under conventional terrestrial conditions are inadequate. Development of visual systems of monitoring information should be based on the results of investigation of the entire system of analysors and, moreover, the entire system of functions of the human organism (an analysis of the systemic functioning of analysors is important for working out such problems as man's orientation in space and time).

A systems approach is especially important for solving the problems of engineering psychology, involved in designing space vehicles. At the same time, any specific task (whether it is linked with the study of the interaction of analysors or the functional characteristics of the cardiovascular system, determination of the size of the cosmonaut's working place or the composition of the ambient gas medium) must be subordinated to the main goal: to maintain the man's activity at all stages of space flights.

When it is a question of transmitting information to or exchanging it with the cosmonaut, or of developing corresponding instruments, one must have at least a general idea of the pattern of his activity: the range of operations he is to perform, their correlation and variations. In this context, *programming the cosmonaut's operations* becomes a task of first priority. This programme must contain not only a list of his assignments but also the requirements for his psychic functions, as well as a concept of

his methods of action. It is important, for instance, to know whether the cosmonaut will have to divide his attention between different information sources, how often he will have to switch his attention, what actions will have to be chosen and from how many alternatives, which actions must ultimately become a habit, etc.

In preparing a flight it is necessary to determine not only what the cosmonaut must do in flight but also how he will do it and what neuro-psychic strain will be claimed by the performance of his tasks. It is necessary to foresee (and the more accurately, the better) the possible methods of his activity with a view to the specific conditions.

At the same time, one should bear in mind the growing variety of tasks entrusted to the cosmonaut (control, repair of instruments, observation, research, etc.). The plan of his activity should also provide the basis for formulating various technical tasks in making the spaceship and become an indispensable component of the flight programme [5].

Just as an engineer plans the operation of the technical elements in the control system of the space vehicle, a psychologist must plan the activity of the cosmonaut. At the same time, the plan of activity drawn up, of course, jointly with engineers should help decide what information should be transmitted to the cosmonaut at a given stage of flight, what form of transmission is the most efficient, what portions it is best to transmit, etc. In addition, it is necessary to settle the problems of programming movement, motor functions and locomotion of the cosmonaut both inside the ship and during walk-outs. It is also important to foresee how the spaceman's psychic states will (or may) change in flight: variations in his work capacity and emotional states. The problem of adapting the spaceship to the cosmonaut should be presented on a broader plane. The task of psychologists is to plan not only the work of the cosmonaut but also his vital activity in general. It is necessary to determine the most rational regimen of work and rest, their alternation in time, the forms of recreation most conducive to the restoration of work capacity and emotional relaxation. This is especially important for designing orbital stations and space vehicles intended for long missions. It stands to reason that planning the cosmonaut's vital activity implies the involvement of not only psychologists but also specialists in other sciences studying man, including physiologists, biologists, sociologists.

Special devices should be designed to monitor the conditions of the cosmonaut and to regulate the flow of information transmitted to him [25, 26]. Such devices must provide additional stimuli to definite analysors, to redistribute the loads upon them, facilitating thereby the cosmonaut's high efficiency during the flight.

A space vehicle should be designed as a *means*, an instrument of work of the cosmonaut and secure the conditions not only for his survival but also for his active performance.

2. Drawing up a working plan on the basis of psychological research is no less important also for selecting cosmonauts, inasmuch as this selection is oriented on purely space activity. The criteria for selection and the requisite system of tests should be determined precisely on the basis of the working plan.

Experts in psychology of labour have worked out some methods of assessing man's psychological properties important for the performance of definite types of work [10, 12, 29]. In the event of occupational selection these are usually brief tests conducted to estimate the peculiarities of certain psychic processes and functions, the speed and accuracy of certain reactions, etc. Special tests are also drawn up for selecting space pilots [4, 8, 9, 36]. Evidently, the attention should be focussed on developing a *system* of tests to estimate the pilot's psychological properties in their interrelationship, as well as to identify the possibilities for their mutual compensation.

Brief tests (or even a system of tests), however, show merely a "cross-section" of a man's psychological properties at the given moment. They must be supplemented with other methods to follow up the development of the requisite properties, i.e., to reveal their trends. Brief tests should be combined with a long-term follow-up. The latter is especially important for selecting methods of training and forecasting the standards of performance. Special attention should be paid to an analysis of man's adaptability to the specific factors of space flight. Psychologists are to decide how much the subject is fit to be a space pilot.

The screening tests involve a major theoretical problem of classifying man's psychological properties. Findings of differential psycho-physiology point to different orders of these properties. Different orders of properties of the nervous system have been revealed by B. Teplov [32] and V. Nebylitsyn [30]. The latter lists as primary properties (properties of the first order) the strength, lability, dynamism and mobility of the nervous processes in relation separately to excitation and inhibition; and steadiness in relation to the above-listed parameters as secondary properties (properties of the second order). In the future, properties of the third and higher orders will probably be discovered and a "pyramid of properties" constructed, to incorporate not only the psycho-physiological but also other properties of man. The key task in the study of man's psycho-physiological qualities is an analysis of their foundations, including the genetic and environmental factors.

To construct a pyramid of man's qualities is especially difficult in the psychological study of the individuals: the character traits, the emotive-volitional sphere, the value criteria, the abilities and requirements. Here the principles and methods of the individual's psychological analysis are added to differential psycho-physiology.

The selection of cosmonauts for prolonged team flights requires an assessment of such properties as psychological compatibility [7, 21], the ability of each team member to coordinate his actions with those of his partners, to work according to a common time-table.

The problem of social communication has assumed crucial importance [21, 27, 28].

The joint Soyuz-Apollo mission and later the space expeditions to the Salyut-6 orbital station were the first international space flights requiring special, including psychological, training. This includes the language barrier, the choice of ways and means of social communication, national behavioral specifics. Now social psychology also helps selecting cosmonauts.

The aforesaid suggests an integrated approach to the selection of cosmonauts, i.e., joint efforts of general and differential psychology, psycho-physiology, psychology of the individual and social psychology. And of course psychological assessments should be combined with medical and occupational proficiency check-ups.

3. Another complex of psychological problems refers to the stage of *instruction and training of cosmonauts.* The process of mastering a given type of activity is dependent on some objective factors which should be taken into consideration in organising instruction and training: setting the instruction routine, the sequence of mastering certain operations.

One of the central tasks in training a cosmonaut is to give him a true-to-life picture of the forthcoming flight (a conceptual model).

It is essential that the pilot realise what lies ahead as clearly as possible. This will help regulate his activity during the flight. The authenticity of this image will have a large bearing on the pilot's adaptation to flight conditions and his behaviour in emergency situations [5, 23, 36].

The *intensity of training* is also of great importance. Guided by an analysis of the subject's activity it is necessary to determine which of his operations should be turned into habits, stereotypes, i.e., become "automatic actions", and which operations would be harmed by such automatism. It will be recalled, incidentally, that stereotypeness of some actions is one of the causes of flight accidents [23, 39].

The gravest difficulties in instruction and training of cosmonauts are involved in imitating their space activity under terrestrial conditions. This refers, in particular, to motor coordination. As is known, under terrestrial conditions the movements of man are oriented in relation to the external coordinates set by the gravitational field. Upon loss of support the established system of motor coordination is disturbed. For work in outer space the cosmonaut should perhaps be trained to coordinate his movements relative to the coordinates of *his own body* rather than the external coordinates. This conjecture, of course, needs to be verified.

No less important is the design and use of training facilities simulating the conditions of real flight. However, they cannot be fully imitated. Hence the problem of transfer, as well as interference, of habits developed with the use of training facilities under real flight conditions. It is important to determine in advance what correction of trained actions will be required in flight, how to train the cosmonauts to make such correction.

The questions also arise of how training in individual operations should combine with the space activity as a whole; whether special facilities are needed to train individual psychic functions (for instance, attention, keenness of observation, memory, etc.), as well as questions of reviving habits after a long interval in activity and drawing up a programme of training in flight conditions [34, 36].

An answer to these questions requires development of the psychological theory of instruction and training. The elements of this theory do exist in psychology, but they were formed in connection with other tasks. Now psychologists apply their efforts to training man for activity in the conditions of space flight with a view to the progress made in this field.

Preparation for a flight does not boil down, of course, to training a definite range of habits and skills. It is necessary to develop in the cosmonaut a definite set of *psychological properties:* emotional stability, an ability for self-regulation—in general, preparedness for a long flight, for isolation from habitual conditions, for possible exigencies and stress situations. Therefore, the cosmonaut should be trained in self-regulation, including arbitrary regulation of his physiological functions. As indicated by the latest research, under certain conditions man can learn to realise and regulate at will some of his usually unconscious physiological functions: the heart-beat, the arterial pressure, the cutaneo-galvanic reaction, the electro-physiological cerebral processes—the resources of his body as a whole [39]. It appears that the methods of training to develop habits of self-regulation should become a component part of the cosmonauts' training programme.

Of enormous value for psychology (and its application in cosmonautics) are the results of self-observation of cosmonauts, i.e., not only objective data on changes in certain physiological functions, the accuracy and speed of certain operations and

activity as a whole, but also *subjective* data reported by cosmonauts concerning their state of being.

The cosmonaut's self-observation ability enables him to estimate his state of being and potentialities and to regulate his activity accordingly and, what is most important, to take the most effective decision in a given situation. In organising the training of cosmonauts the psychological make-up of every trainee should be taken into consideration. People differ with regard to their physiological, psychological and socio-psychological properties. These differences manifest themselves one way or other in their activity, primarily in what is known as the style of individual activity [17]. In view of the fact that in the complicated conditions of space flight the individual properties of man manifest themselves with especial clarity, it is obvious that the training of cosmonauts cannot be stereotyped.

It should be a question not so much of training an average person for space flight as of training a *selected subject* possessing definite individual characteristics for a *particular* flight pursuing specified objectives.

It is, therefore, essential to *individualise* instruction and training and to conduct permanent psychological control (also individualised) over their progress.

The training of cosmonauts should be organised with a view to the general laws governing the process of learning and their specific individual manifestation in any particular case.

The influence exerted on the cosmonaut by his expectation of the space flight presents another important socio-psychological problem. Usually a group of pilots are trained for a flight, but some of them are back-up men. The latter's state of expectation may cause a peculiar stress. Special psychological work is needed to prevent it.

4. Psychological research should also be included in the *flight programme* itself as its indispensable component. Information on the psychological state of the cosmonaut throughout the flight is a major factor for decision-making as to whether he should switch over to manual control, whether the flight should be continued, etc. The cosmonaut's condition is usually assessed from physiological data (electroencephalogram, electrocardiogram, etc.) These data, however, are far from always the most informative sources for an assessment of the cosmonaut's condition. One of the promising trends in the study of man's psychological state is the analysis of his speech [38].

Of late attempts have also been made to work out methods of analysing facial reactions to assess psychic states.

Experiments indicate that *attention* and *operational memory* are most vulnerable to the stress factors. It is advisable, therefore, to

draw up special tests for assessing precisely these psychic functions during space flight.

Finally, the so-called subjective data should also be taken into consideration in developing the means of monitoring the psychic state of the cosmonaut. We are accustomed to assessing man's states mainly, and often exclusively, from the so-called objective data (physiological, behavioral). However, man's *subjective reflection of the states of his own organism* (known as subjective feeling) is part of the real process of self-regulation. A. Ukhtomsky pointed out, for instance, that the feeling of being tired was a premonitory symptom of fatigue [33].

In psychology special methods are worked out for analysing man's subjective evidence, and they should be used along with objective ones in developing the means of monitoring the cosmonaut's psychic state.

Thus, monitoring the cosmonaut's state implies a system of psychological and psycho-physiological methods, that will not only secure an assessment of the current state but will also permit *prognostication* of its development. Development of this system involves the solution of a number of theoretical problems regarding the nature, origin, and mechanisms of psychic states.

As far as the practical aspects of the problem of psychic states are concerned (particularly in the event of prolonged flights), one is faced with the task of working out methods of automatic control over the state of the spacemen on the basis of their psychological and psycho-physiological analysis. It is a question of designing a technical device which would collect and process relevant information and, depending on the character of findings, modify the flow of information transmitted to the cosmonaut, permit (or forbid) a switch-over to manual control, regulate the environment, etc. The solution of this task will require joint efforts of psychologists, psycho-physiologists and engineers.

Information on the cosmonaut's psychic state should also be transmitted to the mission control centre, since it is just as (or even more) necessary for coping with the problems cropping up as is information on the condition of the speceship and its systems. It would be very useful for mission control to have an expert psychologist to make an operational analysis of current information, follow the variations in the cosmonaut's state of being and give him recommendations on the most effective methods of self-regulation in a given situation.

5. Psychological studies do not come to an end when the space flight is over. When the cosmonaut returns to earth a number of new problems arise in view of the need to study the process of his *re-adaptation* to terrestrial conditions and work out methods to facilitate this process.

Psychological information obtained in every flight may be very useful in preparing new flights. This applies both to ship designing and methods of selecting and training cosmonauts. Therefore, it is useful to take special steps to collect, analyse and store psychological information.

Thus, each stage of preparing and implementing a space mission involves a special range of psychological problems. All of them, put together, make up a certain common system.

Drawing up a long-term programme of psychological research in the interest of space exploration, it is important to single out the key problems within this system.

This is, above all, the problem of *man's adaptation to the specific conditions of life and work in outer space.* The problems involved in adapting the space vehicle to the requirements of man, in selecting and training the cosmonaut, his activity during flight, his return to earth demand one way or other investigation of the processes of *adaptation, disadaptation,* and *re-adaptation* associated with the essential variations in the conditions of life and work of the cosmonaut at different stages of preparing and implementing a space mission.

From the habitual terrestrial conditions to multiple gravity and from the latter to weightlessness, and then from weightlessness to multiple gravity followed by a return to terrestrial conditions—such are the variations in the conditions of life and work during a space flight. These variations require serious adaptations of the human body. What is the influence of these adaptations on man's psychic state, and vice versa? How large are man's adaptational potentials? How can man be trained to adapt to changing conditions of life and work? An analysis of these problems is a major task facing the sciences involved in space exploration.

Unfortunately, no general theory of man's adaptation exists so far. Such a theory has yet to be evolved by the joint efforts of biology, physiology and psychology.

It is particularly important to emphasise the significance of psychology in evolving the general theory of man's adaptation, since it is precisely psychology that deals in the first place with the higher specific functions of the human brain.

Another problem which merits to be considered crucial is one of *activity.* As shown above, it integrates many psychological problems arising at all stages of preparing and performing a space mission. It is necessary to draw up a detailed chart of the cosmonaut's specific activities, methods for their analysis and programming.

The problem of *social communication* between cosmonauts as well as between them and mission control personnel is also of crucial importance. This problem integrates a wide range of others

related to the joint work of the space crew, information exchange between it, other spaceships and mission control.

The research programme should include not only questions facing psychology today but also those which will arise tomorrow in view of the increased duration of flights, the development of the system of orbital space stations and interplanetary flights. Such a programme should take into account the trends of scientific and technological progress and be oriented on the future, if it is to be a success.

BIBLIOGRAPHY

1 B. G. Ananyev, *The Theory of Sensations,* Leningrad University Press, 1961 (in Russian).

2 B. G. Ananyev, *The Psychology of Sensuous Cognition,* RSFSR Academy of Pedagogical Sciences Press, Moscow, 1960 (in Russian).

3 P. K. Anokhin, *The Biology and Neurophysiology of the Conditioned Reflex,* Meditsyna Publishers,, Moscow, 1968 (in Russian).

4 G. T. Beregovoi, V. Y. Krylov, N. V. Krylova, B. F. Lomov, "The Problem of Assessment and Prognostication of the Standards of Work of Operator According to the Characteristics of His States", *Voprosy psikhologii,* 1974, No. 5.

5 G. T. Beregovoi, N. D. Zavalova, B. F. Lomov, V. A. Ponomarenko, *Psychological Experiments in Aviation and Cosmonautics,* Nauka Publishers, Moscow, 1978 (in Russian).

6 O. G. Gazenko, B. S. Alyakrinsky, "The Influence of Prolonged Space Flight on the Human Organism", *Vestnik AN SSSR,* 1970, No. 11.

7 F. D. Gorbov, "Some Problems of Space Psychology", *Voprosy psikhologii,* 1962, No. 6.

8 F. D. Gorbov, V. M. Myasnikov, "Psychological Research", in the book *Man's First Space Flights,* Nauka Publishers, Moscow, 1962 (in Russian).

9 F. D. Gorbov, "Operator's Resistance to Interference", in the book *Engineering Psychology,* Moscow University Press, 1964 (in Russian).

10 K. M. Gurevich, *Occupational Fitness and Main Properties of the Nervous System,* Nauka Publishers, Moscow, 1970 (in Russian).

11 V. G. Denisov, V. F. Onishchenko, *Engineering Psychology in Aviation and Cosmonautics,* Mashinostroyeniye Publishers, Moscow, 1972 (in Russian).

12 T. T. Djamgarov, "The Systems Approach to Methods of Psychological Diagnosis in Professional Qualifications", in the book *Problems of Diagnostics in Psychic Development,* Estonian Academy of Sciences Press, Tallinn, 1974 (in Russian).

13 Y. P. Dobrolensky, N. D. Zavalova, V. A. Ponomarenko, V. A. Tuvayev, *Methods of Engineering Psychology Studies in Aviation,* Mashinostroyeniye Publishers, Moscow, 1975 (in Russian).

14 G. M. Zarakovsky, B. A. Korolev, V. N. Medvedev, P. Ya. Shlayen, *An Introduction to Ergonomics,* Soviet Radio Publishers, Moscow, 1974 (in Russian).

15 *Engineering Psychology Applied to Equipment Design,* Mashinostroyeniye Publishers, Moscow, 1971 (in Russian).

16 *Engineering Psychology: Theory, Methodology and Practical Application,* Nauka Publishers, Moscow, 1977 (in Russian).

17 E. A. Klimov, *The Individual Style of Activity Depending on the Typological Characteristics of the Nervous System,* Kazan University Press, 1969 (in Russian).

[18] S. V. Kravkov, *The Interaction of Sense Organs,* USSR Academy of Sciences Press, Moscow, 1948 (in Russian).

[19] A. A. Krylov, *Man in Automated Control Systems,* Leningrad University Press, 1972 (in Russian).

[20] A. A. Leonov, V. I. Lebedev, *Psychological Problems of Interplanetary Flights,* Nauka Publishers, Moscow, 1975 (in Russian).

[21] A. A. Leonov, B. F. Lomov, V. I. Lebedev, "Human Communication in International Space Flights", *Social Sciences,* 1977, No. 1.

[22] B. F. Lomov, "The Systems Approach in Engineering Psychology", *Studia Psychologica,* Bratislava, 1975, No. 4.

[23] B. F. Lomov, "The Systems Approach in Engineering Psychology", in the book *Engineering Psychology: Methodology, Theory, Practice,* Nauka Publishers, Moscow, 1977 (in Russian).

[24] B. F. Lomov, "The Systems Approach in Psychology", *Voprosy psikhologii,* 1975, No. 2.

[25] B. F. Lomov, A. I. Prokhorov, "Control Over the State of Operator",— Materials of the 2nd Symposium on the "Man-Machine" Problem, Leningrad, 1966 (in Russian).

[26] B. F. Lomov, *Man and Technology,* Soviet Radio Publishers, Moscow, 1966 (in Russian).

[27] B. F. Lomov, "Human Communication and Social Regulation of Individual Behaviour", in the book *Psychological Problems of Social Regulation of Behaviour,* Nauka Publishers, Moscow, 1976 (in Russian).

[28] B. F. Lomov, "The Psychic Processes and Human Communication", in the book *Methodological Problems of Social Psychology,* Nauka Publishers, Moscow, 1975 (in Russian).

[29] E. A. Mileryan, *Psychological Qualifications of Pilots,* Naukova dumka Publishers, Kiev, 1966 (in Russian).

[30] V. D. Nebylitsyn, *Psycho-Physiological Analysis of Individual Differences,* Nauka Publishers, Moscow, 1976 (in Russian).

[31] E. N. Sokolov, *Perception and the Conditioned Reflex,* Moscow University Press, 1978 (in Russian).

[32] B. M. Teplov, *Problems of Individual Differences,* RSFSR Academy of Pedagogical Sciences Press, Moscow, 1961 (in Russian).

[33] A. A. Ukhtomsky, *Collected Works,* Leningrad University Press, 1952, Vol. 3 (in Russian).

[34] L. S. Khachaturyants, L. P. Grimak, E. V. Khrunov, *Experimental Psycho-Physiology in Space Exploration,* Nauka Publishers, Moscow, 1976 (in Russian).

[35] E. V. Khrunov, L. S. Khachaturyants, V. A. Popov, E. A. Ivanov, *Operator in Space Flight,* Mashinostroyeniye Publishers, Moscow, 1974 (in Russian).

[36] E. V. Khrunov, I. F. Chekirda, A. I. Kolosov, "Training Cosmonauts in Flying Laboratories in Conditions of Weightlessness and Work in Outer Space", *Voprosy psikhologii,* 1971, No. 5.

[37] E. M. Yuganov, "Specifics of Functioning of the Otolith and Cupular Systems of Man's Vestibular Analysor During Changes in Weightlessness", in the book *Problems of Space Biology,* Nauka Publishers, Moscow, 1965 (in Russian).

[38] J. Flanagan, *Speech Analysis, Synthesis and Perception,* New York, 1965.

[39] *Biofeedback and Selfcontrol, 1973,* Aldine Publishers, Chicago, 1974.

[40] W. Hacker, "Some Psychological Aspects of Establishing 'Human-Centered' Man-Machine Systems: Conditions and Nature of Intellectual Procedures of Operator", *XX International Congress of Psychology,* Tokyo, 1972.

Historical Museums

TAMARA GOLUBTSOVA

In the past years Soviet museums have enjoyed a veritable boom. Attendance rose from 75 million in 1965 to nearly 140 million in 1977 and continues to increase. This heightened interest is due to a number of factors, in particular, the great attention the Communist Party devotes to cultural development and the organisation and functioning of museums as vehicles of knowledge and centres of research. The combination of the two enables museums to play an important part in promoting science, culture, public education, the ideological and moral, patriotic, internationalist and aesthetic education of our people.

Our museums are custodians and propagandists of the country's historical experience and progressive traditions. The mementoes of history and culture collected and displayed in the museums reflect the material and spiritual life of past generations, the centuries of our history, the struggle of our peoples for freedom and independence, the founding and development of the Soviet socialist state. They are an inalienable part of the world's historical and cultural heritage and testify to the immense contribution our peoples have made to world civilisation.

Our museums bring one into direct contact with the very origins of knowledge. This has both a cognitive and emotional impact, and is a factor in character-building.

In the very first months after the Great October Socialist Revolution, the Soviet Government took effective measures to make all historical and cultural values accessible to the people and preserve them for future generations. Soviet policy on all aspects of culture is consistently guided by the principles enunciated by

Lenin. The tasks facing the museums as ideological institutions are set out in the resolutions of CPSU congresses and in the decisions of the Party's Central Committee and the USSR Supreme Soviet. They provide a comprehensive programme for all our museums in the period of developed socialism. And realisation of this programme will make for important qualitative changes in the work of museums, primarily by greatly expanding their research activities.

The Soviet Union now has about 1,500 state museums (together with branches). Of these 375 are historical and revolutionary museums; 242 are commemorative museums devoted to crucial events or outstanding personalities in politics, science, technology or culture; 519 are local museums covering Union republics and other administrative units down to rural districts. Their displays trace the development of the given area from antiquity to our day. Lastly, there are museums run by scientific organisations, schools, industries, etc.

Most of the museums have been organised in the Soviet years. In Azerbaijan, for instance, there are now 47 museums (none before the revolution), in Armenia 42 (one), in Georgia 83 (two) and in Kazakhstan 40 (one). About 200 museums were opened in 1966-1975, and 90 more in the past five years. Exploratory studies are under way for the organisation of state museums in Eastern Siberia and the Soviet Far East, where there are now large industrial centres.

About 9,000 museums have been organised and are serviced by volunteers in factories, schools, universities, rural Soviets, army units, etc. Their organisers are usually school teachers, doctors, senior school pupils, pensioners and servicemen. This has become a mass movement that is enriching science and is performing a notable educational function. Many valuable relics of the past have been found and donated to museums by young people participating in "search excursions" to historical sites and battlefields. Much of the credit for this movement must go to the Central Committee of the Komsomol which, together with the USSR and Union republics' Ministries of Culture, aided and advised by museum personnel, have brought members of the Komsomol and Young Pioneers into this highly interesting and useful activity. The volunteer museums are also an important reserve for the development of state museums; in fact experience has shown that some of these volunteer museums can with time be developed into state museums or their branches.

Experience has also shown the advisability of amalgamating city, regional and republican museums into comprehensive units. This has been done, with very favourable results, in the Buryat Autonomous Republic, Vladimir, Ivanovo, Kalinin regions and

other areas. Such amalgamation makes for more rational planning, better preservation of museum exhibits and, of course, adds to their educational value.

Latterly, and especially following the 1967 law on the protection and preservation of monuments of history and culture, much more attention is being paid to historical and cultural complexes. Usually these are architectural ensembles, historical buildings, etc. Special mention should be made in this context of the Lenin Commemorative Museum in Shushenskoye, the Siberian village to which Lenin was exiled at the turn of the century.

Another new development is the "open-air museums" on the sites of archaeological digs, and ethnographic complexes, where monuments of folk wooden architecture are collected. Such museums have been established in the Ukraine, Georgia and the Buryat Autonomous Republic. One of these "open-air museums" not far from Kiev covers 140 hectares, and though it is still in the development stage, is of great interest to ethnographers, archaeologists, architects and artists. The Ukrainian Academy of Sciences and museum's staff are working on the project—a comprehensive display of the architecture and customs of the old and new Ukrainian rural community. Our plans also include organisation of museum complexes to commemorate crucial events in Soviet history.

Soviet museums have about 50 million display units—artifacts, manuscripts, works of art—all of them in one way or another related to history. Many of them are concentrated in the State Historical Museum (4 million display units), the Hermitage (approximately 4 million), the Central Museum of the Revolution (one million), the Central Museum of the Armed Forces (over 600,000) and the State Museum of Ethnography of the Peoples of the USSR (over 500,000). Many regional museums have sizeable collections, too. The Perm Museum, for instance, contains more than 300,000 display units, and the Sverdlovsk and Smolensk museums over 200,000 each. Valuable displays are also to be found in smaller museums.

The total State Museum Collection is a comprehensive collection of monuments of natural history, material and spiritual culture obtained in different areas, from different sources and differing also in material and technical details. Under Soviet law historical and cultural values are the property of the people and are under state protection.

About one million display units are added every year. They come from diverse sources—special expeditions, acquisitions at factories, building sites and offices, contributions from labour, Party and war veterans, prominent scientists and cultural personalities. Besides, every year the museums acquire more posters,

articles of numismatics, philately, descriptive and applied art. Many items of artistic and cultural value are presented to the museums by organisations and private persons.

The annual archaeological and ethnographical expeditions are usually organised in conjunction with the appropriate institutes of the Academies of Sciences of the USSR and the Union Republics. Such cooperation is important, in particular, in collecting materials on the history, social and economic conditions, science, culture and the revolutionary movement in a given area. Close cooperation is especially essential and valuable in selecting contemporary material. For instance, our museums are completing their collections on the history of developed socialism as a source base for future research and educational activities. Thus, expeditions from nearly 30 museums visited the Baikal-Amur railway construction project in 1975-1977. The history of this, as well as of many other projects, cannot be fully assimilated without a study of the materials in our museums.

Joint expeditions with scientific institutions and participation of scientists in their organisation are only one aspect of the problem of extending our collections.

Another aspect, and one requiring serious consideration, concerns the source of exhibition materials and selection criteria, for our aim is to give a comprehensive and authentic picture of the processes of contemporary life. Scientists are just as interested as museum workers in building up a fund of historical evidence and in preserving the cultural heritage of the past, and we can always count on their cooperation and initiative.

The research and information-gathering activity of museums constantly reveals new historical data. It is made available to the scholar through the documentary bulletins issued by many museums. The State Historical Museum, in conjunction with the USSR Academy of Sciences' Institute of History of the USSR, has compiled chronicles on the history of peasant wars and the revolutionary movement. One of these, issued in 1973, contains documents of the peasant war of 1773-1775 led by Yemelyan Pugachev. Two years later, in 1975, the Museum published the first volume of *the Decembrists' Epistolary Legacy* and *Materials on the 1905-1907 Revolution.* The Central Museum of the Revolution has brought out several volumes of reminiscences of participants in the revolution, the Great Patriotic War, the building of socialism and communism. Materials on the history of the various Union republics and regions published by regional museums are still another source of historical evidence.

The state museums publish scientific catalogues and surveys of their collections. The Central Museum of the Revolution has brought out catalogues *Decorations and Medals of the Soviet Union,*

Leaflets of the October Revolution, and *Bolshevik Leaflets of the First Russian Revolution of 1905-1907.*

The State Historical Museum has prepared a survey of all its documentary sources, a collection of portraits of revolutionary democrats from the nobility, numismatic catalogues, a guide to 11th-19th century Russian weapons and another to peasant dress in European Russia. The Historical Museum's department of ancient manuscripts is cooperating with the Archaeographical Commission of the Division of History, USSR Academy of Sciences, in preparing a comprehensive catalogue of hand-written Russian books.

Hundreds of Soviet and foreign scholars come to study the materials in our museums, and no small number of fundamental monographs, scientific articles and teaching aids have been compiled on museum material. It is no exaggeration to say that every serious historical study is in one way or another connected with museum collections. Graphic material from museums is widely used to illustrate such multi-volume works as *History of Moscow, History of the Great Patriotic War, History of the USSR from Ancient Times to Our Day, Illustrated History of the USSR,* etc. Museum collections are also an inexhaustible source of data for diploma theses, classroom study, research in local history and establishment of museums on a voluntary basis.

The principal aspects of museum research are studies in the history of the USSR and CPSU, and special historical disciplines including archaeology and ethnography. In particular, the State Museum of Ethnography of the Peoples of the USSR, the historical museums of the Union Republics and Museums of the Revolution have produced a number of scientific works. The USSR and Union Academies of Sciences are working jointly on a *Comprehensive List of Monuments of History and Culture.* The Historical Museum maintains close contacts with the USSR Academy of Sciences' Institutes of History of the USSR, Archaeology and Ethnography. The State Museum of Ethnography of the Peoples of the USSR conducts joint research with kindred institutes in a number of Union republics, especially in devising regional atlases and preparing multi-volume histories of the peoples of the Soviet Union.

Considerable progress has been made in regional studies, including economic and cultural development in recent years. As a rule, such studies are conducted in close cooperation with universities, technical schools, archives and local historians. Of special importance also is research undertaken in museology (history of museums, scientific, architectural and artistic principles of displays, scientific foundations of educational activity). To improve all these aspects, the USSR Ministry of Culture has decided to establish a USSR research laboratory of museology at the Central

Museum of the Revolution. With the help and participation of the USSR Academy of Sciences, the new laboratory should become an effective centre for elaborating the theoretical, methodological, organisational and practical aspects of museum work.

Analysis of the research conducted by the country's leading museums indicates that they can rightly be considered research centres that hold a place of their own in the system of the social sciences. They are closely associated with the appropriate institutions, primarily the USSR and Union Republic Academies of Sciences. Much help in this respect comes from the Scientific-Methodological Council on Museums under the USSR Ministry of Culture, of which Yu. Polyakov, Corresponding Member of the USSR Academy of Sciences, is Chairman, and the Museum Council of the USSR Academy of Sciences headed by Academician Rybakov. This interaction of museums and research institutions is now being formalised by concluding creative cooperation agreements. Such an agreement, for instance, now exists between the USSR Academy of Sciences' Institute of History, Archaeology and Ethnography of the Peoples of the Far East and the Arsenyev Museum of Local Lore in Primoriye Territory.

The museums play an extremely important role in popularising and promoting the study of history. The museum has become part of the general educational system, and school pupils make up the biggest single contingent of museum visitors (40-50 per cent). Museum workers and school teachers are eager to bring the museum closer to the teaching process. To this end special thematic excursions are organised and lessons are sometimes held in museum halls. The main means of promoting the study of history in museums is, of course, their displays, which can be regarded as an original source of historical knowledge. In working out the scientific concept of a museum's display, museums are guided by the latest achievements in Soviet historiography and by their own research in areas that have not been adequately explored, but are important in terms of museum work.

An effective museum work in promoting the study of history and the dissemination of historical knowledge is, of course, impossible without proper understanding of the interests and requirements of the public. Soviet museum-visiting public is of a high level of culture. Sociological studies conducted by the museums help to establish why people come, how the museums help to form their general outlook, moral judgements and aesthetic tastes.

The public regards the museum as an additional source of information, one that provides concrete knowledge both of history and of our own times. Acquaintance with original documents, etc.,

has a positive influence on people's minds and feelings, even if they only confirm what the visitor has already learned from books, films and other sources. The cognitive motive is, as a rule, the principal one, especially among students. The interest in early periods of our history, in relics of the past, in all the things that reproduce a picture of material conditions, culture and customs of ages long past, goes hand in hand with a tremendous interest in the history of Soviet society, especially of recent years. Visitors are attracted mainly by such heroic chapters in the life of the Soviet people as the Great October Socialist Revolution, the Civil and Great Patriotic Wars; the biographies of men and women who had shown extraordinary moral qualities in the revolutionary struggle, in the battles for the freedom and independence of our country and in the building of socialism and communism.

Excursions play a steadily increasing role in the educational work of the museums. In 1977 there were about 1,500,000 excursions, an increase of 50,000 on 1976, and about 43 million excursionists. Basically, there are two types of excursions: general, meant to acquaint the excursionists with major historical periods or the museum's display as a whole, and thematic, providing a more profound knowledge on a given subject. School children, students of higher and secondary schools, and people attending political educational classes are catered for by excursions on the history of the Communist Party and of the USSR, particularly in the period of developed socialism.

Still another aspect of museum's educational activity is lectures on various aspects and periods of history. Some of these are delivered by museum staff members at factories, collective farms and military units. The lectures are illustrated by mobile exhibitions. Equally popular are the propaganda trains and ships that go out into areas where there are no museums. All in all, museum workers deliver over 100,000 lectures a year on a multitude of subjects. In addition to all this, the museums, independently or in conjunction with other institutions, run free-time universities of history, lecture series, youth clubs, study circles, meetings with veterans of the Communist Party or other individuals who have had a direct part in the making of history.

Educational work is highly differentiated to meet the requirements of the different social, age, occupational and other categories. This will be extended by wider cooperation with scientists, university instructors and school teachers, and also by the introduction of scientific principles of museum operation. That is why at the present stage, historians have a much greater role to play in solving the cardinal problems involved in extending our network of museums and raising their standards.

Science and Culture

MERAB MAMARDASHVILI

There are many paths crisscrossing the area covered by the present paper. One could traverse all of them, by linking up the various aspects, cross-sections, and abstractions pertaining to the problem, but I naturally will dwell on the main aspect of the problem which can be termed the ontological problem. That is to say, I shall speak of the way in which scientific knowledge determines man's place and potential in the world, in the Universe that is independent of man and mankind. In other words, I shall speak of man's basis in the world in the age of science.

I believe that it is precisely from the point of view of ontology that one can see most clearly both the difference between science and culture and the potential ties between them, these ties being on the whole tense and dramatic, irrespective of actual cultural crises in some historical epoch or other. In other words, I believe that there is more than just a difference between science and culture—there is also a constant tension between them stemming from the very essence of these two phenomena and not from any concrete dramatic circumstances, for instance the "two cultures" phenomenon of the 20th century (Charles Snow), i.e., the painful rupture between natural scientific knowledge, on the one hand, and the humanitarian culture, on the other. I shall skip this aspect, for, on the whole, I believe this to be a secondary feature derivable from the ties that I am going to speak about.

The gist of the matter may be briefly formulated as follows: the very possibility of posing the problem of culture and science as distinct things (which is undoubtedly fraught with paradox, for we always define science as part of the cultural wealth) is, I believe, due to the difference between the *content* of the intellectual or

conceptual structures which we call science and the existence of these conceptual structures or of their contents.

Indeed, what is the cognitive content, e.g., of universal physical laws? It is clearly linked, first and foremost, with the empirical demonstrableness of these laws according to experimental rules containing no reference to their "cultural" place and time. In other words, the formulation of these laws cannot be limited by the particular (and in this sense accidental) nature of the human being, the very image of man as a "device" that reflects, acquires knowledge, etc. Neither does the content of the physical laws depend on the fact that the observations which form the basis for their formulation are performed on Earth, this is, under the particular conditions of the planet called Earth. A clear distinction is therefore made in science between the laws themselves and their initial conditions. Science from its very inception (not only modern science, where this distinction is particularly clear, but antique science as well) has existed in the cosmic dimension, so to speak.

To put it differently, science considered in this dimension presupposes not only the universality of human reason and experience regardless of any societies and cultures: it also presupposes independence of some of its contents from the particular type of sensual and intellectual structure of the human being shaped by the Earth's nature, to say nothing of the accidental nature of the society and culture in which the human being exists that formulates such universal physical laws.

We are therefore faced here with a rather strange picture, at least in the following sense. On the one hand, we are dealing with man's orientation on contents, on perception *through* contents (through ideal abstract objects and relations between them, through invariants and symmetry structures, through readings of experimental measurements identified with results of theories, etc.) of the laws and objective orderliness of the world which are expressed in terms and characteristics independent of the accident of the realisation or non-realisation by the thinking being of the entirety of his life, from the conditions of its realisation and stable reproduction. On the other hand, it is not to be doubted that the contents serving as the means of formulating universal and objective laws (which is the ideal of knowledge) themselves *exist,* for they are real phenomena in the lives of certain beings in the Universe who do not cease to be subjects just because they happen to be scientists. Naturally, a subject always belongs to a definite society, definite time, and definite culture.

Indeed, we do not merely perceive the world *through* "essences"—we have to occupy a certain position in the world as thinking beings. It is not pure spirit, soaring above the world, that perceives it, for a fact! (Understanding of culture would be greatly

elucidated by analysing the extent to which the *physical laws themselves* permit the existence of beings capable of discovering and understanding these laws.) Knowledge is therefore not an incorporeal cognitive act of "perception-through" but something having the attributes of existence and, running somewhat ahead I'd say, cultural density, cultural corporeity.

This phenomenological angle serves as the framework for considering the distinction within scientific knowledge between what we regard as the universal physical law which does not depend on us and in addition has a "natural life" in the Universe as a real phenomenon, and the way in which we have assimilated what we know and the sources of what we know, the way in which we command all this. In the latter we glimpse certain functional limitations on what we can undertake and how we can act in the world as sentient and thinking beings. In a certain sense, man must always realise a certain whole and order in his conscious life in order that physical laws might be expressed or, if you like, occur in what I have called density or corporeity. That is the basis on which cultures grow, for the realisation referred to above is not provided for or guaranteed by the spontaneous course of natural phenomena. In summing up this train of reasoning, we may express it in somewhat different terms: there is a difference between scientific knowledge itself and the measure (always concrete, always human, and we can now say cultural) in which we assimilate the content of this knowledge and our own cognitive forces and their sources. This latter is apparently what is termed *culture*—in its relation to science, in this case. Which may also be expressed as follows: science as culture.

Knowledge is objective, culture, on the other hand, is more subjective. Considered in this light, it becomes the subjective aspect of knowledge or the mode and technology of activity conditioned by the resolving potential of the human material and, on the other hand, capable of constructing something original in it, as we shall see further. It is thus clear that I do not treat the problem of science and culture as an external problem of the relation between science and culture as a whole and its other component parts—everyday consciousness, art, morality, religion, law, etc.; I am not trying to incorporate science within that whole. In selecting a path to follow, I chose a framework in which I regard science itself as culture or, if you wish, *culture in science.*

Science, then, is culture to the extent to which its content expresses and reproduces man's ability to possess the knowledge of the Universe which he himself has attained and the sources of this knowledge, and ability to *reproduce* them in time and space, that is, in society, which naturally assumes having a definite social memory and a definite system of coding. This system of coding,

reproduction and transmission of certain skills, experience, and knowledge given a human measure, a system having a predominantly sign nature, is what we call culture in science or science as culture.

But, having defined science in this fashion, we obtain a strange result. Viewed in its cultural aspect, it is similar to all the other spheres of human activity (art, morality, law, etc.) which also have to be culture, that is, they have to contain a historically changeable measure determining the conservation, coding, and transmission of some experience and skills, transforming and culturising the spontaneous relations of each separate individual. However, I believe this identification of science with other cultural phenomena to be useful, not harmful. In what sense is it useful?

Let us dwell on the following fact. It is a long-established axiom in science that a science of unique phenomena, i.e., those that cannot be included within a family of similar phenomena, is non-existent and impossible. An example of this sort of phenomena is a language that cannot be included in any language family: it does not lend itself to linguistic analysis. However, the phenomenon of scientific knowledge itself we regard in everyday life as unique (it is not art, or morality, or law, etc.). It follows, then, that knowledge about knowledge cannot be constructed. In what way can we claim then to have a scientific theory of knowledge, epistemology, etc.? It is clear that we shall be able to say something scientific about science only if we place the phenomenon of science itself into a broader family as a rightful member. This broader family, I believe, is the mode in which science, along with other cultural phenomena, is related to the human phenomenon from the point of view of the problem considered at the beginning of the paper. To wit: in what way is the human phenomenon defined in the Universe depending on science (or art, or moral and legal norms—the list might be continued) and how is it reproduced in quantity in this particular quality? Considering science from this standpoint only, we may obtain further definitions of science as culture identical with all the other types of cultural activity, distinguishing it at the same time from nature and various natural phenomena.

Moving along the lines of force of the contradiction formulated at the beginning (i.e., the contradiction between the content of knowledge and its existence), we are immediately struck by the following circumstance. In speaking of man's cosmic situation in science, a situation which distinguishes man from man's particular form, and one which man attempts to understand, we are unavoidably bound to assume the existence in the Universe of certain phenomena, processes, and events which, although they are observed in it physically, would nevertheless be impossible by

themselves, that is, they could not occur by spontaneous action of natural concatenations and laws, without man's presence. Wheels do not revolve of themselves, as a natural phenomenon; missiles do not fly; electrons do not leave traces in the Wilson chamber; human beings do not perform heroic or in general moral deeds contradicting all natural expedience or instinct of life. Although, I repeat, once they have occurred, they are physically observable facts. That is to say, the Universe includes phenomena which would not have occurred according to natural laws but which, having occurred, are physically quite observable and allowed by the laws of nature. These are already existences, not merely thought contents!

In other words, there exist special objects which, on the one hand, cannot be reduced to pure "spirit", to intellectual inventions of the brain, and on the other hand, cannot be deduced from physical laws existing at present or possible in the future. Objects of this sort are the material of culture. According to this view, culture in science and in other spheres of activity grows out of that which could not have occurred according to natural laws but nevertheless does occur and, having occurred, is observable as existences of a certain kind.

Consequently, taking scientific knowledge in its relation to the human phenomenon and those of conditions which are *not* given by nature, I first of all single out that which happens in the world due to the fact that it cannot occur in another, natural, way. These subjects or cultural phenomena generate and structure around themselves a field of force in which things may occur that do not occur of themselves in the cause-and-effect concatenation and sequence of natural mechanisms—for instance, that state in which we observe a universal physical law in the world. From the point of view of consequences *for* man, for culture genesis, this constitutes an important aspect of the role of science, which consistently reproduces and keeps alive in time and space something that had once occurred for the first time (it could not have occurred naturally neither for the first nor for the second time). This abstraction, which may tentatively be called a phenomenological one, distinguishing between content and existence of knowledge, is not easy to perceive and put on record, but it is very important.

On the other hand, cultural phenomena are those which are substituted for the physical abilities naturally possessed by man, transforming these abilities into a certain structure and a certain modus operandi, the result, stability and non-ambiguity of which do not depend on the accident of individual ability and skill and, which, moreover, lend them something fundamentally different through these transformations. For instance, the screw is a cultural

object, for it transforms the action of the physical forces into a result that could not be obtained otherwise. Laws of science, systems of equations and methods for their solution, etc., may also be regarded in the light of this function—naturally with regard to the abilities of the mind and perception. From this point of view, the problem of distinguishing between material and spiritual culture is eliminated. There is simply the problem of culture. Science interpreted in this way is also culture. We may regard scientific formations as complex transformers or apparatus for transforming our natural abilities and potentialities. And that means that what we would be unable to do as natural beings we do as culture-in-science beings—not through direct activity of the mind and perception but precisely by transformations which must, of course, have "organs" or "instruments". From the point of view of keeping up the unique phenomenon of man in the Universe, the problem, as I see it, consists precisely in the availability of such cultural instruments incorporating something invented "once and for the first time" (science as cognition). Without them our conscious life and psyche, left to the natural processes, would present a kind of chaos and disorder to the exclusion of the possibility of carrying out the tasks of cognition.

No content, the content of universal physical laws inclusive, could in that case exist, retained and reproduced, for their only basis would then be abilities for observation of psychic associations, reasoning, etc., with which man is naturally endowed. The more so that the latter depends on the energy concentration of a definite human being living at a definite point in space and time. What I mean is quite simple. For instance, if we are not attentive, our thoughts wander; if we have no enthusiasm, we cannot do the simplest things. These are but natural processes. Culture is precisely that which is built in such a way that it should be a maximally invariant quantity with regard to the accidents of natural processes and the unavoidable chaos which arises out of repetition of these processes in time, i.e., when our attention is diverted by purely physical causes, the intensity of emotions cannot be maintained at the same level, etc.

In science, art, etc., mankind has invented a sort of mechanisms (let us call them ecstatic mechanisms) or cultural objects whose action has an effect, which helps to avoid that by ecstasying the human psychological apparatus, by increasing the range of its potential states, they transpose it into a different dimension, a different mode of being which is beyond the individual and which, in addition, is more reasonable and ordered than man himself. Let me cite an example.

Rafael's "Sistine Madonna" is in this sense not culture, it is a work of art. But it is naturally a cultural object to the extent our

relation to it reproduces or produces for the first time in us the human potential which we lacked before our contact with this painting (I mean the potential for perception, understanding, etc.). A work of art is always a unique object of which there is only one copy: it is inimitable. Something happens once, after which "the world of the Madonna" emerges where we continue to live as cultured beings. The emergence of a work of art or scientific discovery and their being as culture are different things. Science, just as art, contains the element of the possible.

* * *

Thus I have obtained another definition of science as culture. It is as follows: science is something which man regards as higher and more reasonable and valuable than man himself. Let us try to avoid attaching associations to the words "valuable", "high", etc. What I mean here is the parallel between order and chaos. Norbert Wiener was in this sense quite right when he said that the human being is a being that introduces islets of order into the disorderly world, into the chaos of the Universe.

We can now consider, on a new basis, the same problems that have been posed above and which are perhaps not easily discernible in the form that I have given them. Let us try at this stage to bring them out more clearly. What was said above on the relationship between science and culture or on science as culture is explication and expression of intuition, I repeat intuition and not something that we know. Intuitively science (or, to be more precise, inquisitiveness, for it is the starting point of activity which later produces certain scientific results) is viewed as something which delivers us from routine, from the accident of social peripeteia, accident of culture, accident of psychological shape given us by the act of birth.

To put it differently, we hope to acquire in the state of curiosity a certain position which we could view as something more integral and reasonable than the vicissitudes of our environment, which would therefore put us in a certain universal personal relation to society and culture. And what about knowledge of science? In terms of that knowledge, we see what science is; we see that it is linked by numerous ties with society and culture; that any intellectual act performed in society makes the performer of that act dependent in a thousand different ways, involves him in a thousand different connections eluding him yet having an objective nature for him, etc. That is knowledge; or it may be phrased like this: the natural appearance of relations, which in itself assumes a certain phenomenological procedure for determining what it is that we really experience and strive for intuitively. Only when we have performed this procedure can we see the problem in a new light and return to the dependences about which knowledge tells us. Making a note of this and taking intuition as a starting point, I want to show next that science as cognition and science as culture are fundamentally different things, they are elements within a certain unified structure.

Science as culture is normative. It assumes that there are certain structures or, as was said above, cultural objects which transpose natural forces and man's energy into a different quality thereby transforming them and producing a result unobtainable in a natural way. In this sense the ecstatic mechanism of science is the same as that of art and other kinds of cultural activity. But these are normative structures. However, we have defined the content of knowledge with regard to universal terms. How is, then, the universal in knowledge correlated with the fact that the scholar may be, for instance, a Russian, a Georgian, an American, etc., and may transform the natural human forces and potential through the mode and skills that have been formed and exist within the given culture and not within some other? Indeed, a different culture may have a different mode. For instance, we use the wheel principle for locomotion but, although this is practically universal for all cultures, it is accidental from the point of view of the laws of physics! No physical laws of motion bind us to move on wheels or move something about on wheels. I disregard for the present attempts now made to move on air-cushions, which may become a fundamentally different culture.

Physical laws, I repeat, do not depend on this. They do not specifically determine the necessity of wheels, just as the Maxwell laws do not determine the existence of waves of any particular frequency or the necessity of a machine of a certain make. What is then *cognition?*

In my view, cognition is an ever living, ontological element within science taken as a whole characterised by two oscillatory movements: oscillation towards the destruction of normative structures and reversal to a certain prestructural zero state of knowledge and, vice versa, the reverse movement from the chaotic next-to-zero state towards a new possible structure. And that goes on continually.

When we speak of cognition, we have in mind, I believe, something that exists at any given moment and disappears at any given moment. A glimmering point, as it were, without which all subsequent scientific activity is impossible. To express it more clearly, let me cite plagiarism. Plagiarism, as we know, is repetition of something that has been done earlier, if one disregards the legal aspects. Cognition, on the contrary, is doing or thinking that

which has not been done or thought. That is to say, it is something fundamentally different from the existing theories, formulas, textbooks and all sorts of systematisations of scientific knowledge. The body of science incorporates only that which happens once and for the first time. But that is not culture! For this characteristic is inapplicable to culture. As I have said, culture is by definition that which is coded, transmitted, or reproduced.

Science therefore contains a special element, cognition, which is precisely what makes it science as compared to culture and introduces drama and dynamics into the life of the human society. It is a continually pulsating, life-giving and at the same time death-bringing principle of culture; a two-faced Janus intending, on the one hand, to overcome any accidents of human ability and, on the other, personifying that very ability. Paraphrasing a well-known dictum, I would express myself on this point as follows: only he has the right to call himself a scientist and speak of the *scientific nature* of science who feels what cognition is capable of seeing its supra-personal and eternally true meaning. For where there is cognition, there is science. After all, from the very beginning, science is an undertaking that endeavors to answer the question: what is the world like *by itself,* irrespective of culture-sign systems and mechanisms imposed upon it? Only if we take this view of science shall we now be able to resolve the contradiction that was the starting point of our reasoning, namely, the contradiction between the content of intellectual structures involved in science, art, etc., and the existence of these structures?

The problem approached from the direction of the culture-forming function of science affords a different view of the very structure of the human being, a cultural-historical view and not one of natural appearance. If we take this view, we shall be bound to ask the question: what is it that we perceive with, properly speaking? With our sense organs? But they are natural structures having the specific measure of a concrete individual. And the individual, as we have said, is capable of formulating *universal* laws that are outside any measure. Can it be that a worm, were it endowed with consciousness, or a Martian, would formulate different laws? Our scientific pursuits imply the premise that those would be the very same laws, unaffected by the accident of *our* observation of them: we must be able to observe them before formulating them.

So what do we cognise with? I believe that if we think out the idea of the culture-forming function of science or scientific cognition to the logical conclusion we shall realise that we cognise with organs that are not given us by nature, organs that are *invented* in the space of thought transposing man into the cosmic dimension that cuts through all differences between cultures and

links man with the potentialities of the Universe. I here mean approximately the same thing that Niels Bohr, following Kant, expressed in a conversation with Heisenberg: the various possibilities of our logic, of our cognition are based on certain fundamental forms which belong to reality irrespective of man. But I would like to stress that these are forms of the *objective* existence in the Universe of phenomena which are due to the presence of *humans* in this Universe and which exist as a sphere in the same way as the biosphere and the noosphere do.

Culturological analysis of science shows, for instance, that it is precisely at the moment when Galileo looks through the telescope at stellar bodies that the organs of observation, of vision of the qualities of the universality of the world are formed, organs that do not exist separately either in Galileo or in the telescope, and neither do they exist without the history of science and its culture-forming function. We may therefore draw the following conclusion. The very possibility of our cognition of something in the world depends on the extent to which we are beings that have overcome nature; it presupposes our "second birth", as they said in ancient times. To put it in modern idiom, it presupposes an effort aimed at mastering the sphere of the mind available to observation, the desire to know this sphere being, as we are aware, one of the basic constituent elements of modern culture. There seems to be no other way to solve the contradiction. But, that being so, science as culture seems to be linked with man-as-possibility, not simply man as such. There is a very interesting comment on this in Shakespeare's *Hamlet.* Addressing the king, Ophelia says: "Lord, we know what we are, but know not what we may be" (Act 4, Scene 5).

Now this link with the possible as yet non-existent man, always with the possible man, is, in my view, the determinant in the realisation of cognition and in the crystallisation of culture. Ophelia, naturally, did not speak of it in the context of some complex philosophical or scientific argument. Those who read *Hamlet* at the time it was written and produced understood what was meant here. All one had to do was to take a look at one's inner self and see that there is always the possible but unfamiliar Me and that there is another Me that I do know. Only this *possible* is always indefinite, neither this nor that, etc. Reverting to our theme, without this "neither-this-nor-that" it is nevertheless impossible to define science adequately, it seems; that is, to define it in such a way that it might be viewed as a meaningful kind of activity consonant with one's own aspirations. For the goal of science is to obtain universal knowledge and to solve the most vital problems.

Thus, on the one hand, science, as we have stressed at the very beginning, has no dimension, no measure; on the other, we now see that it does have them in the shape of a certain field bounded by the dynamics of man's dual structure, a field which we enter as soon as we begin scientific pursuits and in which we dwell and develop as thinking beings. Science just as art, etc., is in this sense a field invented by man, where experimenting with the human potential, with man-as-possibility takes place. Culture is always a certain possibility already realised. Precisely for the reason that, apart from culture, there are domains of experimenting with man-as-possibility, with man's possible position in the Universe (and he has to take such a position lest the understanding should be lost of what is said about or seen in the Universe), the existence of such domains is, I believe, the premise for the well-known fact of the plurality of cultures. Why are there many cultures, not one? Moreover, cultures are not only numerous, they also emerge, change, and die...

We know that those were the sort of philosophical questions that man asked himself. Namely, first: why many, not one? Philosophising began when this question was asked; I, too, have attempted to answer it within the framework of our theme. Second: why is there something and not nothing? Since the problem of correlation between science and culture is here considered against the background of the being of order and chaos, that is, ontologically, I shall attempt to answer this question, too (and that will be the last point of my discourse).

When man asks, why is there something and not nothing, he finds himself in the situation of attempting a philosophical evaluation of what I believe to be absolutely accidental—the fact that there is at least some sort of order in the world; sometimes there is knowledge, at other times beauty or justice or goodness, etc. I mean to say that man as philosopher is not astonished to find disorder or chaos—these are not objects of philosophical astonishment; he is astonished at the fact that there is *something*, and he wonders how it is possible. This "there-is-something" or the tendency towards reproduction in man of order that is not founded on anything, a tendency that has cultural consequences, is a determining one. I would like to emphasise this point—order is not founded on anything; that is to say, it has no natural foundation or natural links, it has to be continually reproduced by someone.

Let me cite as an illustration the phenomenon of morality. At first sight, this has nothing to do with science. Let us bear in mind, however, that we do not regard science as a unique structure. This was well understood in antiquity. It is not for nothing that truth, goodness and beauty were then united within one act of

philosophical reasoning. That was not a union of different disciplines (aesthetics, ethics, and ontology) but rather the expression of the very nature of that astonishing mode of human being in which being is to the extent to which there is an understanding of it in being itself, there is an effort to maintain and reproduce it.

Ancient philosophers insisted that evil is perpetrated *of itself*, while good has to be done *deliberately* and reproduced continually, for even if it has been done, it does not continue to exist of itself. This conclusion is, I believe, equally true with regard to the definition of science as culture given above, that is, on the one hand, with regard to science as cognition (that glimmering point involving man-as-possibility and requiring a constant and deliberate effort) and, on the other hand, with regard to science as culture proper (in the sense of normative structures introducing order into the chaos of life).

The entire complexity of philosophical interpretation of the problem of correlation of science and culture (as well as that of good and evil, by the way) consists precisely in the difficulty of fixing ontologically one of the members of these paired concepts. For instance, good necessarily appears to us as some norm. There is a norm of good, and evil is evaluated against this norm. However, the philosopher has to ignore this norm in the course of his analysis (although it is always present), inasmuch as he is making an attempt to define the conditions for all morality, all concrete acts of goodness.

Using this as a model, I tried to show that science as cognition is also a kind of norm for all cultural structures, though at the same time it does not coincide with any of them. There exists the norm of antique science, of 17th-century science, of 19th-century science, etc., localised within definite cultures of definite times. However, the conditions of their existence (which in themselves are not a norm) can not be localised—they are part of the definition of the content of scientific phenomenon as such, that is, of cognition.

It is thus impossible to understand norms or the normative orientation of scientific thought without a clear conception of the conditions of all this. The alternative would be an insoluble contradiction that would be at variance with our normal intuition. And intuition tells us that science cannot depend on the accident of being thought or produced by someone in a definite culture or definite society. The global nature of problems facing mankind today is the best evidence of this.

Pattern of Evolution of the Indian Caste System

ANATOLY KUTSENKOV

Methodology of Research. The pronouncements of Marx and Engels on caste—in the context of their views on the course of world history and on the social system of pre-colonial India—constitute an integral concept that gives us a basis for further study of this problem. Many Western scholars, both before and after Marx, regarded caste as a predominantly cultural phenomenon, whereas Marx ascribed its emergence and development to the conditions of material production. "Castes and guilds arise from the action of the same natural law that regulates the differentiation of plants and animals into species and varieties, except that, when a certain degree of development has been reached, the heredity of castes and the exclusiveness of guilds are ordained as a law of society."[1] The caste system is not only a product of the division of labour, but also one of the means of raising its productivity in a society where manual labour preponderates. This is why the endeavour "to make trades hereditary" or "petrify them into castes"[2] is a tendency shown by many pre-capitalist societies. Moreover, the "hereditariness" of a caste's trade points to a basic relationship, a kinship existing between members of that caste. This combination of production and kinship principles is characteristic of a certain level of socio-economic development of a society, or rather of its lack of development, for "the less the development of labour, and the more limited its volume of production and, therefore, the wealth of society, the more preponderatingly does the social order appear to be dominated by ties of sex".[3]

Why has the caste system been preserved precisely in India?

This question demands special comparative studies. Marx, however, found an explanation: The "petrification" of trades into castes, he writes, does not take place where "definite historical conditions beget in the individual a tendency to vary in a manner incompatible with the nature of castes".[4] This remark enables us to make a number of important methodological conclusions. One of them is that caste should be studied not only on its own, i.e., the group level, but also on the individual level. Though formally the lowest, the individual level is actually the highest because the essence of the individual is "the ensemble of the social relations".[5] Caste cannot be understood out of the context of society as a whole. And so it is impossible to explain its social substance and functions by the methods of only one of the social sciences, be it political economy, philosophy, law, history or ethnography. There is a need of a comprehensive interdisciplinary approach.

The conditions which cause the changeability or stability of the individual comprise the totality of factors that make up the structure of the given society—production, social relations, culture, etc. Far from being autonomous, these factors interact with one another because they are connected by a complex of cause-and-effect relationships. That is why it is desirable that the systems approach be applied to the study of caste, which represents a tight interlacement of elements relating to both the basis and superstructure.[6]

In analysing the aspects of social development which pertain to the individual, Marx attached great, if not primary, importance to the evolution of the forms of ownership, laying special emphasis on the role of small-scale private ownership. The private property of the direct producer is the basis of commodity production and competition. It brings into being a qualitatively different, a higher type of the division of labour (manufactory at first), and this, in turn, improves the product and its producer, frees the individual from his "natural ties" and promotes the development of his personality. From the backwardness of the institution of private ownership Marx deduced the main characteristics of India's pre-colonial society—of its economy, social and political structure, ideology, etc. Today the question of the nature and level of development of ownership in pre-colonial India is debatable. Throughout the Middle Ages, state ownership of the land prevailed there. The free transfer of land from hand to hand was obstructed by numerous obstacles in the form of the customary law.[7] The backbone of production was a subsistence economy. All this confirms the thesis that the institution of small-scale private ownership in mediaeval India was not so widespread.

In exploring the evolution of caste it is very important to designate the starting point on the scale of time as well as on the

scale of its metamorphosis. The historical scale cannot be identical with simple chronology. It should reflect the stages of the formative development of society. The caste system ideally corresponded to the feudal stage in the development of Indian society, based on manual labour, on the prevalence of collective forms of ownership and of communal forms of social organisation, and on barter. This is the type of society that will serve as the starting point on our time scale. It is also important to specify the caste to be taken as the primordial one. Although there is an enormous number of castes (India has about 12,000 castes today) it is difficult to find among them two which are alike. Castes differ in genetic, functional, religional and other peculiarities. And their development is uneven. This is why we need to construct a generalised caste model which contains its essential characteristics and ignores its insignificant attributes. As the starting point in its development it is necessary to take the state it was in when it optimally corresponded to the conditions of feudal (traditional) society (a "traditional caste" model).

The Traditional Caste: Its Functions and Structure. Castes made up a component part of Indian feudal (traditional) society. They determined its economic, social and political structure. They personified its dominant social relations, pervaded all its levels and were incorporated in all its major institutions. The caste system was an essential part of the social set-up. It ensured the normal functioning of society and the interconnection of its elements. If we "remove" caste from the traditional society of India, it will "disintegrate" into separate and unconnected parts.

Castes acted as units of the social division of labour. Connection with a particular occupation or trade handed down by inheritance was their key feature. It is manifested in the names of the castes, which have been preserved up to the present. These names designate not only occupations, but also the products of production, the implements of labour, and even elements of the technology of production.

Attachment to a trade presupposes that castes as forms of organisation of the division of labour could not exist in isolation from one another, each by itself. While performing a definite set of social functions, they all conditioned one another. The functional interaction of castes took place within the traditional commune, which, owing to this, was a more or less self-sufficient organism. This system of inter-caste interaction (known as *jujmani* or *baluta*) in traditional society embraced all aspects of life—economic, social, cultural. For their services the members of a caste were paid in kind; remuneration was determined not by the quantity and quality of work done, but as custom required.

Relations between the parties concerned were maintained on an individual basis.

The attachment of a caste to a particular trade or occupation was also determined by the caste's relation to the means of production and by its social functions. Castes were, therefore, the basic units in the socio-class division of the commune and of society as a whole. They stood in a strict hierarchical order (of the given locality). Each of them was allotted a particular status which expressed its class position.

The higher castes owned land, held key posts in the administration of the commune's affairs, and headed religious rites and ceremonies. For one and the same crime members of the higher castes were punished less severely than members of the lower castes (which made up the exploited section of the traditional society). The members of a lower caste were not entitled to own land. They had to till the land of the higher castes, work as their servants, etc. The "untouchables", who did "unclean" work, lived on alms and were often in hopeless bondage to the higher castes.

The status of a caste was ultimately based on socio-class characteristics. In religious culture the caste hierarchy was expressed on the sacred scale of purity or profanity. The socio-class position of a caste represented a fantastic reflection "in the minds of people of those external forces which prevailed over them in their daily life", a reflection in which worldly forces took the form of unworldly ones.[8] The status of a caste was central in the system of values, and its numerous outward characteristics (way of life, dwelling, clothes, food, objects of worship, etc., and also its elaborate symbolics and etiquette) were a subject of special concern for every caste and for the commune as a whole. Over them raged fierce struggles reflecting group and class contradictions. While inter-caste interaction caused mutual attraction of the castes, status contradictions caused mutual repulsion. Concepts of endogamy and profanation were means of protecting group exclusiveness.

Owing to the greater or lesser exclusiveness of the communes, the distribution of castes in a comparatively limited but linguistically united territory, and the assemblage of castes of the same rank varied in different parts of the country. But the unity of India as a socio-cultural whole was expressed in the fact that the diversity of the castes themselves as well as the diversity of the order of their arrangement in the local systems of hierarchy were bound to an all-India scale, namely, the four-division system (the brahmans, the kshatryas, the vaishyas and the shudras).

The system of administration in the commune was also based on caste relations. Communes were self-governing units. Relations

with the state affected mostly questions relating to taxation and to land utilisation and land tenure at the different levels. The internal life of the communes were regulated by the rules of customary law.[9] At the head of the village-commune stood the *panchayat,* consisting of the elders of the main castes of the village. The *panchayat* decided on practically all the affairs of the commune, settled disputes and administered justice. In the eyes of the commune the functions of all castes were equally essential, for they were indispensable for preserving the commune as a self-producing collective. Violation of caste rules met with universal condemnation and could entail expulsion from the caste and banishment from the commune, which in the conditions of traditional society was tantamount to the death sentence. An outcast was deprived of the means of subsistence, which were virtually impossible to find outside one's own caste.

The caste system was an integral part of the dominant ideology—Hinduism, and was founded on its dogmas: *Sansara, Varnashrama, Karma* and *Dharma.* According to the doctrine of Hinduism, everything that exists represents a particular form of manifestation of the supreme and eternal soul—*Atman.* The soul is eternal, but its embodiment or envelope is a thing or creature which is born, lives and dies so as to be reborn. The world is a gathering of unequal elements, a strictly hierarchic system in which everything has a status of its own. In human society this hierarchy finds expression in *Varnashrama,* the caste statuses. The wheel of life is rotated by *Karma* (fate), which not only predetermines the form of existence, but also provides the aim of life and points to the road leading to it (*Dharma*). A man's *Karma* is his caste, and his *Dharma* is his execution of his caste's orders. Scrupulous fulfilment of the duties laid down by the caste holds the promise of the higher status in a future reincarnation, and non-fulfilment entails degradation.

The harmony between the caste system and the basic doctrines of Hinduism is so striking that it induced many generations of Indologists to ascribe its emergence and existence to the specifics of Hinduism. However, the typical functions of caste which are performed by other religious communities (Christian, Islamic, Sikh, etc.) on the basis of *jujmani* and the presence of caste within these communities prove this point of view to be inconsistent.[10]

A caste should be regarded as an intricate group, its members being bound together by a multitude of ties. These ties can be conventionally divided into two main types:

I. Kinship (vertical) ties. With consideration for the main trends of development of caste (dealt with below), kinship ties should be regarded as the system-forming, stabilising element in the structure of caste. The members believe their caste to be a

group of relatives, regardless of whether the kinship is real, imaginary or potentially possible. We remind the reader that caste is endogamic. No member may find a bride or bridegroom outside the caste. The endogamic boundaries mark the outward bounds of caste (*jati*). Ties of kinship at the different levels serve as the dividing lines of its inner (vertical) articulation.

The primary link of the caste is the family. In traditional society it had the form of a "joint family"—a community of relatives along the male line, their wives and children, which included up to three or more generations. It had a total of several dozen members. Such a family occupied one or several structures, had a common hearth, jointly owned property and made joint use of the incomes. The family was a hierarchy with the eldest in the male line at the top.

Real relations, both near and far, along the male line constituted a whole system of local exogamic groups called "lineage" in English-language literature. This term is sometimes used in Soviet publications, too. The family and its lineage form a *gotra*—a name used by the higher castes (other names were used by the lower castes). In Soviet and foreign literature the term "*gotra*" designates a particular level of caste organisation existing in practically all castes. This is the biggest exogamic group within the caste inhabiting the entire territory of its settlement. The persons forming a *gotra* regarded themselves as blood relatives descending from a common ancestor. In a caste there should be no less than two gotras, though in reality there are several dozen or hundred.

II. Socio-cultural (horizontal) ties are based on secondary features and functions—economic, social, cultural. The traditional caste attaches paramount importance to relations based on the identity of the occupational interests of its members. Socio-class and prestige interests determine status (group) ties. A complex of cultural-normative ties is formed by a common way of life, cult, ethics and rules of behaviour, common systems of values, orientations, etc. In the life of the traditional caste neighbour ties hold an important place. In both town and country, members of one and the same caste settle in compact groups which form what are called the caste communes of the neighbourhood; characteristic of these are the individual nature of intercourse, cohesion, solidarity and good organisation.

The stability of intra-caste ties is ensured not only by the conscious will of people, but also by rigid discipline based on formal and informal control of individual and group behaviour. Verification of the observance of caste rules and customs is entrusted to a special body, namely, the caste *panchayat,* which looks into all cases of deviation from caste traditions, administers

justice and metes out punishment to those who have committed an offence. Informal control plays an equally important role. The consequences of unofficial ostracism for the apostate is sometimes as grim as the formal punishments of the *panchayat.*

Owing to the weak stratification of the spheres of social life in traditional society, the various types and forms of ties were little differentiated in time and space, and virtually also in the mind of the individual belonging to one caste or another. In life it is difficult to draw a boundary line between kinship and socio-cultural ties, for without the former the latter were inconceivable. Both kinship and social contacts constituted two aspects of social relations. The same is true of group and cultural-normative ties. Socio-class, prestige and cultural interests were compressed in caste status. And neighbour ties embraced all types and forms of relationships.

This confluence was also characteristic of the social roles of the individual. The habitation of a person was restricted mainly to the commune (which was often identified with the village), and he mixed mostly with the members of his own caste. Practically his whole life passed within his family, caste and commune. Here he worked and rested, worshipped the gods and met relatives and friends. Since "the real intellectual wealth of the individual depends entirely on the wealth of his real connections",[11] the confluence of ties and roles also determined the mentality of the traditional Indian, who could not imagine himself outside his own group. His interests rarely went beyond the bounds of his commune. His thinking was irrational. He deified everything—nature, his family and caste and home, the implements of labour and the methods of production. He could not see the difference between the secular and the ecclesiastical, between life and ritual. Custom was the highest law of life, and to comply with caste rules was both a civic and religious duty.

The Impact of Capitalism on Caste. Strictly speaking, the capitalist mode of production rejects caste and the caste system. Under capitalism, ownership relations acquire decisive importance in social relations, and kinship ties move to the background. Capitalism is incompatible with exclusive social organisms. Bourgeois society is characterised by a steadily growing division of labour, by a break-up of the spheres of social life and of the social roles of the individual. In a mature capitalist society the individual, as Marx put it, is "freed from natural and other ties which in former historical epochs made him a member of a particular limited human conglomerate".[12]

Yet a century of capitalist development and even decades of India's independence, in the course of which the disintegration of traditional society accelerated immeasurably, have not led to the

disappearance of caste. The clue to understanding this phenomenon lies, in our view, in the peculiarities of capitalist development in India. In Europe the capitalist mode of production was preceded by an epoch (lasting centuries) in which patriarchal institutions underwent a process of breaking up, and in which individualised private ownership took shape and commodity production was dominant.

When Europeans set foot in India the material and intellectual prerequisites for capitalism were still lacking there. As it developed, capitalism had to build a basis of its own. In colonial conditions capitalism, far from decomposing, adapted pre-capitalist relations to the requirements of colonialist exploitation. This is why capitalism's impact on the caste structure had a limited, partial and at times deeply contradictory character.

The agrarian reforms sponsored by the British since the late 18th century in India legally established private ownership of land there; this greatly broadened the sphere of commodity-money relations. This question has been adequately studied in Soviet social science. What remains in shadow is another question—the degree of influence exerted by the juridical enactments of the British. Despite the innovations of the colonialists, the communes continued to exist for a long time under customary law. (Let us recall that questions pertaining to property and inheritance were referred to castes and other traditional groups. The decisions of the *panchayats* in civil affairs were regarded as conclusive and not subject to protestation.) But customary law hampered the individualisation of property, slowed down its free movement, and preserved the survivals of collective forms of ownership.

This dual power—that of the law and that of custom—has not disappeared as yet. Even today there are frequent cases of persecution and coercion in regard to the *Harijans,* of encroachment on their property by members of the "pure" castes, who in fact do not allow members of the lower castes to own land and real estate. Research into the problem of ownership should apparently pay attention to such an institution as the "joint family", where the owners of property were not the individual but the collective.

The development of capitalism entailed sharp expansion of the spheres for the application of labour (formally not related to the traditional interaction of castes), especially in industry, transport, the administrative apparatus, etc. The possibility of earning a livelihood outside the framework of traditional relations undoubtedly undermines the role of tradition, whose sanctity is no longer fortified by economic necessity. Capitalism brings about mass geographical mobility of the population. Pulling man out of his customary surroundings, migration transfers him to a different

social and cultural environment, confronts him with the problem of adapting himself to new conditions, and forces him to give up many of the customs and rules imposed on him by the caste code. On the other hand, the consequences of colonial development, partial utilisation of labour resources (overt and covert unemployment) and poverty retain tens and perhaps hundreds of millions of people within the framework of traditional relations, hamper their disintegration. Population migration is not great in scale. By diverting "superfluous" work force from the countryside, it partially removes inner tensions from the caste commune, and the money flowing to the village from the town increases its viability.

Factory industry has a strong influence on all aspects of the life of society. It belittles handicraft; deprives caste of its occupational exclusiveness, and labour of its sacral significance; and brings the productive activity of man beyond the traditional environment, freeing him for a certain time from the control of his caste. Cheap factory-produced articles hit primarily trades organised on caste principles, first in town and then in the countryside. Under capitalism, social status is determined not by origin, but by relationship to the means of production. Caste status gradually loses its social significance, while money (the presence or absence of it) gives equal rights to members of the higher and lower castes. Social differentiation also penetrates the core of caste, forms and isolates in it groups with opposed socio-economic interests, and brings within it class contradictions which weaken its connections and often lead to the split of caste.

But because of the lack of capital, the competition of imported goods, the narrow domestic market, and the goal-oriented policy of the colonial authorities, factory industry in India developed slowly. Up till now India is predominantly an agrarian country. Factory industry was concentrated near the ports and was oriented towards the foreign market. Its impact on the traditional structures was restricted. Even today the formation of contemporary classes in India is far from completed. Their proportion in the social structure is not great, and they are characterised by the presence of many of the elements of traditional society.

Under the influence of capitalism significant changes are taking place in the spheres of culture and law. Bourgeois culture with its rationalism and individualism and the culture of the democratic masses are equally incompatible with the traditional concepts of life, of good and evil, with the notions about the place and purpose of man. Secular education was one of the key factors that brought down caste institutions and caused the ideological collapse of the caste system. In this respect a major role was played by bourgeois-reformist anti-caste movements headed by prominent philosophers, enlighteners and public figures. Owing

to the influence of the anti-caste democratic movements, already in the colonial period India adopted laws prohibiting some of the more odious caste customs. After the Great October Socialist Revolution in Russia the ideas of Marxism-Leninism became widespread in India and greatly influenced the development of social consciousness.

India's 1950 Constitution introduced in the hierarchic, caste-dominated society universal de jure equality and helped turn the caste member into a citizen of the country. The acts passed on the basis of the Constitution greatly limited the possibility of applying caste customs in civil relations.

But capitalism has not abolished the cultural tradition of Hinduism. Its different aspects have undergone varying degrees of modernisation, while its religious backbone has remained unchanged. For the overwhelming majority of the population religion remains the dominant form of consciousness; its dogmas and caste rules dictate the standards of behaviour and the mode of life.[13] Sociologists warn against too much optimism in evaluating the role of education as a factor of secularisation. The upsurge of nationalism resulting from the victory of the national liberation movement led to a keener interest in the country's cultural heritage; but it also made an ideal out of traditions and traditional institutions.

Urbanisation ranks high among the factors promoting the transformation of traditional society. The town, with its concentration of modern productions, classes, social relations, and progressive ideological and cultural trends, forces upon villagers its own way of life, its own requirements and ways of fulfilling them, and greatly affects the system of values in the countryside. But India remains one of the least urbanised countries of the world. Most of the Indian towns are rural-type settlements with limited possibility of influencing the rural periphery. Even the large industrial centres retain many of the features of the pre-industrial town. Alongside the city blocks rented on a class principle, there are districts with large concentrations of particular religious, ethnic and caste groups which adhere to the traditional way of life. The operation of the laws of spontaneous capitalist development in the context of India has failed to demolish the entire socio-cultural basis of caste-dominated society. At the present stage capitalism has brought into being a society of the transitional type. Its characteristic features are a multistructural spectrum, the existence of different types of social relations, classes and social groups and of social institutions, a large variety of socio-cultural subsystems based on traditional religious culture.

A society of the transitional type has its own type of individuals. It is the individual who simultaneously lives in

different socio-cultural worlds and sticks to incompatible values, and plays contradictory roles. While already a member of many groups of the contemporary type (class, production collective, trade union, political party), he continues to be a member of traditional communities (large family, caste, commune, etc.).[14]

In a certain respect capitalism itself helps to preserve traditional relations. In conditions of impoverishment of the broad masses, unemployment, competition and alienation, caste based on kinship (the most understandable) ties and on traditions of solidarity and mutual help remains a true refuge from privation and adversity.

The Dynamics of Inter-Caste Interaction. To the extent that capitalism subordinates to itself the economy, the social, cultural and other spheres of life, caste in the traditional, "classical", sense becomes weaker. But to say that caste exists only in diminishing islands of traditional society would be a gross simplification. The traditional and the contemporary are not divided by a wall. They influence each other and interact with each other. They are bound by thousands of links. As already pointed out, caste is part of the structure of the personality, and as such it is present in the village hut, in the city flat, in the craftsman's shop, as well as in the modern industrial enterprise. In different conditions caste has different foundations, performs different functions, manifests itself in different forms. This diversity is probably one of the main characteristics of contemporary caste.

In constructing a model of the traditional caste we began by affirming that its existence was impossible out of contact with other castes. But in the conditions of today the principle of interconditionality loses its value: the whole complex of forces and factors of capitalist development, which destroys caste-dominated society, undermines primarily inter-caste ties. Social conditions free castes from this formerly imperative interdependence.

The hardest blow is dealt to the economic ties between castes. Money is one of the key factors diminishing inter-caste interaction. With the development of market relations, the very functions of castes in the system of their interaction increasingly become objects of commodity circulation. Sale and purchase, lease, and mortgage contribute to the conclusive elimination of personal ties, undermine the sanctity of traditions. The mutual services of castes increasingly take a commodity form and are subject to the laws of the market—the laws of value and competition. The final result is that the caste-tied population, after passing through a number of intermediate stages, is pushed out of the bounds of traditional interaction. The competition of goods and services offered by capitalist production knocks out of the sphere of traditional interaction not only individual "producers", but whole caste groups.[15]

Economic changes bring about corresponding changes in the social structure. As contemporary classes develop castes lose their inherent characteristics; and it becomes less and less possible for the higher castes to exploit the lower ones by non-economic methods. With the broadening of the functions of state bodies, the functions of government and the administration of justice pass from the communal *panchayats*, in effect from the higher castes, to the state. The rigid system of domination and subordination and caste discipline based on symptoms of purity and profanation grow weaker.

Something similar is observed in the ritual sphere: owing to the dwindling role of the sacred in the life of people, the number of those who consider themselves obliged to participate personally in rituals and ceremonies and to carry out their instructions scrupulously is on the decrease. The performance of caste rites increasingly becomes the business of a limited circle of "specialists". And the rituals themselves do not remain unchanged: secondary ceremonies and those which are difficult to perform are dropped. Moreover, the rituals (especially in urban conditions) lose their sacral significance and increasingly become an entertaining affair.

The disintegration of inter-caste interaction is a diachronic process. The further the given sphere of inter-caste interaction is away from the basis, the slower is the process of its disintegration. It is not accidental that among the noted forms of inter-caste interaction ritual ties are the most stable. The under-developed superstructure has a reciprocal effect on the other processes of releasing the castes from mutual bonds. Thus, owing to the incomplete stratification of civil and sacral elements in the life of present-day Indian society, those castes hold out most firmly within the framework of *jujmani* which perform "dirty", "defiling" functions—clearing away of sewage and carcasses, washing of linen, processing of skins and hides, etc. In the social sphere members of the higher castes often retain authority irrespective of their socio-class status, and therefore exert influence on many aspects of social life.

Nevertheless, the process of disintegration is gaining momentum. The once firmly united caste communes are falling apart. The strings tying the castes to one another are weakening and breaking. Castes are becoming more independent of one another. Their actions are increasingly determined not by pressure and coercion on the part of other castes, but by their own interests, however wrongly they may understand this.

Depending directly on the concrete situations (which are too numerous to be countable), all castes can be classified according to the degree of their "freedom". In the most general

terms three main types can be distinguished: a) the traditional type, characterised by the presence of the complete set of major inter-caste ties; b) the transitional type whose economic ties are in the main served but which still retain ritual and social ties; c) the contemporary type (the atom caste), which has got rid of all forms of dependence on other castes.

The disintegration of inter-caste interaction entails important consequences for society as a whole as well as for each separate caste. The severance of inter-caste ties releases the forces of inter-caste antagonism, which in traditional society were balanced by the forces of mutual attraction (interaction). The growth of caste communalism in today's India is in a large measure due to the break-up of inter-caste ties. Piling up on traditional antagonisms are the class contradictions of today, which lend them an even more destructive force. For each separate caste the severance of its ties with other castes represents a qualitative change—a transformation, in a sense, into its opposite. It marks an important point on the road of its evolution, of its integration into a class society.

From Castes to Classes. If kinship relations serve as the system-forming ties of caste, then it is here that we should first of all look for the answer to the question of whether these relations will be preserved or dissolve in the environment. Available data show that caste endogamy remains valid in a backward, village environment as well as in developed urban surroundings. The proportion of inter-caste marriages in present-day India is insignificant as yet, though it has a tendency to grow. A public opinion survey has shown that the attitude towards the possibility of inter-caste marriages is becoming more and more tolerable, especially among members of contemporary social classes and strata—among the industrial bourgeoisie, industrial workers, and the urban, non-traditional intelligentsia.

To clarify the prospects of development of caste it is important to make an analysis of these shoots of the new, weak as they may be. Cases of inter-caste marriages involve, as a rule, members of kindred castes which in the not distant past constituted a single *jati* and were approximately on the same level of the caste hierarchy. Marriages between members of castes which are far apart in the genetic and ritual respects are impossible as yet, especially between members of the "pure" and "impure" castes. A certain progress in social consciousness in the matter of allowing inter-caste marriages applies precisely to the category of closely related castes. The share of "liberals" among the respondents was small. The bulk of the public had a negative attitude towards such marriages.

The firmness of kinship ties is testified by, among other things, the fact that all registered cases of violation of the integrity of castes do not reject caste endogamy as such. The splitting and fusing of castes have always been taking place. From this one should not conclude that endogamy is weakening. In the past as well as today new formations have been taking shape in the form of caste. But since caste endogamy is still in force, caste is preserved.

In fact the conservatism of caste does not go beyond this. In all other matters caste manifests amazing dynamism and adaptability to changing conditions. Thus, in our time the occupational ties of castes are in the process of destruction. Caste rules cannot take account of the thousands of new occupations, including those in the spheres of life which are "unusual" for a caste-dominated society.

The status ties between members of different castes are undergoing significant changes. With the disintegration of traditional society and the disappearance of caste interaction, and with castes losing their exclusive features, status is being gradually deprived of its material basis. Status is withering away as a symbol of social position and prestige, and also as a uniting principle of caste. The development of society and caste involves the splitting of caste status into its component elements. These elements then acquire a significance of their own and an independent life. If ritual position undergoes an extremely slow change, socio-class position is subject to more rapid changes. In life this diachrony at first leads to incompatibility between the elements of status, to contradictions between them and to negation of one another. But in the final analysis the socio-class essence is separated from status. Status ties between members of a caste are no longer one of the basic, vital material interests of man; they move to the background and have, if anything, a religious-cult content.

Cultural and normative ties between caste members are weakening. Since inside a caste there are groups of different socio-class positions and different value orientations, there cannot be full agreement on compulsory fulfilment of all caste rules regarding clothes, food and customs. Each group interprets these rules according to its own interests and notions.

The power of the *panchayats*, which formerly guarded caste customs watchfully, is also weakening. Such key spheres as the regulation of property relations and decision on civil and criminal matters are falling out of their competence. The importance of the punishments meted out by them are diminishing. Neighbour ties, too, are in the process of decomposition. The mobility of property and people violates caste homogeneity in both urban and rural areas; and caste neighbour communes are also coming apart.

The weakening and destruction of traditional intra-caste ties are compensated for by new ties stemming from the new functions undertaken by contemporary castes. In the economic sphere castes play an important role in mobilising capital and organising production, sales and financing. They formulate and represent the interests of various social groups and engage in philantropy, enlightenment and education, and the organisation of leisure time activities. One of the major functions of the contemporary caste has to do with politics. Each of these functions deserve separate study. Here it is important to emphasise that many of them, despite their novelty and ultra-modern appearance, in effect serve as a continuation of the old, traditional functions or are a result of their decomposition and transformation. At the same time the present trends of caste activity create new forms of ties between its members, which complement the basic (kinship) ties.

The change of functions entails a deep-going reshaping of the organisational structure of the caste. The sponsor of social activity in traditional society was the caste neighbour commune. Today there are other forms of caste organisation in its place, the primary one being the *jati*, whose importance as a social activity group has been growing immeasurably. The remoteness of its various sections from one another and the territorial dispersion of its members lead to the contacts between them losing their personal character. In the administration of its affairs increasing importance is attached to the mass media—the press, the postal, telegraphic and telephone services. But being burdened by ritual functions, the *jati* cannot cope with all the tasks that modern life entrusts it with. So to attain their specific aims castes today often set up specialised subsidiary organisations—trade-union, youth, women's, and also production, sale, finance, educational and cultural.

The most important role in the public life of India is played by political caste organisations—associations, federations and parties. But not all the members of the given caste participate in its specialised bodies. In this case the caste deviates, as it were, from the prescriptive principle of requirement and adheres to the principle of voluntariness and selection. Some of the more modern castes do not connect membership in their subsidiary organisations with membership in their *jati*, which is undoubtedly a kind of challenge to caste endogamy. In form, in structure as well as in aims they are similar to organisations of the contemporary type based on common socio-class interests.

What are the prospects of development of caste? This question can be formulated in a different way: what is the role of caste in the formation of the classes of bourgeois society? This question deserves special attention.

While they are social formations in an antagonistic class society and have in this respect a number of common features, castes and classes are nevertheless entirely different in nature. A caste community unites people of the same origin, whereas classes take shape on the basis of the identity of their members' basic interests, determined primarily by their relationship to the means of production. A caste is a closed group, affiliation to which is determined by birth. A class, on the contrary, is open. The place of a caste in society is fixed by the rules of law, in this case customary law. The position of a class is not legally formalised.

But, as was noted earlier, capitalism in India has found as an initial basis not the individual but the group personality. This is why the building material for contemporary classes and strata remain predominantly not the individual, but the group, in this case caste. As it broadens and deepens, capitalism draws castes into the orbit of its classes. The inclusion of castes in the composition of classes takes place in different ways, depending on the degree of social differentiation in castes. If there is little differentiation in a caste, it is incorporated in one class or another in its full composition. The majority of castes today are no longer an integral social whole. They are inserted into contemporary classes by parts. Until a certain time caste bonds withstand class antagonism and preserve the integrity of the caste. But growing socio-class tensions within the caste confronts it with a choice: either to give up social activity entirely, to grant its members social and political freedom, to retreat to the "neutral" sphere of cult and religion, or to split into two (or more) castes in accordance with socio-class interests. In real life we come across both these variants. But in whatever ways the inclusion of members of a caste in the system of contemporary classes has taken place, they form within these classes more or less exclusive groups. From the point of view of the main class characteristics, these groups are part of an integral whole and have common basic interests. But on the other hand, they are disunited by kinship ties and differ in culture and way of life. Their mutual relations are burdened by caste prejudices (socio-psychological stereotypes), which hamper mutual understanding and class formation. The "cell" structure of contemporary classes also affects the sharpness, the forms of manifestation and the development of class conflicts, and leaves a deep imprint on all aspects of social and political life, especially at the lower, local levels.

While acknowledging the confusion of social relations in today's India, it would be a great mistake to overlook the main tendency. It consists in the fact that in the course of their development classes suppress and, in a certain respect, assimilate castes. This is the essence of that process, contradictory as it may be. The person

is gradually individualised and acquires greater independence; class interests become the motive force of socio-political behaviour. Caste distinctions are overshadowed by common socio-class goals. And these distinctions, which are attributable to peculiarities of the way of life, gradually disappear as the latter becomes universal. The first, though still weak, signs of the slackening of caste endogamy show that endogamy as the basis of caste is not eternal.

Conditions of existence determine the different rates of formation of different classes. As regards the industrial bourgeoisie (the most cultured section of society), for example, this process is faster in many respects. It is difficult for the working class to get rid of caste prejudices because of its heterogeneous structure and because its ranks are being constantly reinforced by new-comers from pre-capitalist set-ups. But the living and working conditions of the working class, and the interests if its struggle are a powerful stimulus to the speediest possible overcoming of the remnants of patriarchalism. The influence of caste in its most obsolete forms lasts longer in the intermediate strata of present-day society, which account for the bulk of India's population.

* * *

Taking account of the main tendencies of development in the structure of contemporary caste, we can distinguish its stabilising element, its system-forming connection (namely, kinship ties) and the active element—the group of production, social, political and cultural relations. In a multistructural society the evolution of caste is a diachronic process. Castes are going through various stages of evolution, fulfilling a variety of functions, and which therefore differ from one another significantly, coexist. In a patriarchal environment caste exists in a more integral, close to the traditional form; it has a real basis under it and performs the main traditional functions. In a highly urbanised, modernised environment it has already lost its material basis, and has turned into a cultural phenomenon, into a remnant of consciousness. In other words, the meaning of the concept of "caste" varies according to the socio-cultural context. For this reason the definitions of caste (based on a listing of such of its qualities as connection with a trade, area of settlement, mode of life, etc.) given in both Soviet and foreign literature can no longer be accepted today for all levels of development of caste.

A contemporary caste can apparently be defined as a historically transient, intricate and closed group based primarily on kinship ties, which owes its existence to survivals of obsolete forms of production relations as well as to the substance of Indian cultural tradition. The functions and forms of organisation of such a caste are diverse and depend on specific regional, socio-economic and cultural conditions.

NOTES

[1] Karl Marx, *Capital*, Vol. I, Moscow, 1969, p. 321.

[2] Ibidem.

[3] Karl Marx and Frederick Engels, *Selected Works*, Vol. III, Moscow, 1970, pp. 191-192.

[4] Karl Marx, *Capital*, Vol. I, p. 321.

[5] Karl Marx and Frederick Engels, *Selected Works*, Vol. I, p. 14.

[6] G. G. Kotovsky, *Some Aspects of the Problem of Castes. Castes in India*, Moscow, 1965 (in Russian).

[7] E. M. Medvedev, "Rent, Tax, Property. Some Problems of Indian Feudalism", *Problems of the History of India and the Middle East*, Moscow, 1972, p. 21 (in Russian).

[8] K. Marx and F. Engels, *Works*, Vol. 13, p. 328 (in Russian).

[9] B. S. Sinha, *Legal History of India*, Lucknow, 1953, p. 227.

[10] V. A. Pankratova, "The Role of the Christian Community in the Political Life of Kerala State (India)", *Narody Azii i Afriki* (Peoples of Asia and Africa), 1974, No. 4; J. Ahmad, *Caste and Social Stratification Among Muslims*, Delhi, 1973.

[11] Karl Marx and Frederick Engels, *Selected Works*, Vol. I, pp. 39-40.

[12] K. Marx and F. Engels, *Works*, Vol. 12, p. 709 (in Russian).

[13] *Status Images in Changing India*, Bombay, 1967; *Social and Cultural Factors Affecting Productivity of Industrial Workers in India*, Delhi, 1961.

[14] A. B. Shah, *Introduction.—Tradition and Modernity in India*, Bombay, 1965, p. 19.

[15] A. H. Somjee, "Groups and Individuals in the Politics of an Indian Village", *Asian Survey*, June 1962; R. D. Lambert, "The Impact of Urban Society Upon Village Life", *India's Urban Future*, Berkeley, 1962; J. Karve, J. S. Ramadive, *The Social Dynamics of Growing Towns and Its Surrounding Area*, Poona, 1965.

Socio-Economic Differentiation of the Developing Countries

VICTOR SHEINIS

Questions of socio-economic differentiation of the developing countries attract growing attention. The processes determining these countries' future can be likened to a planetary explosion scattering in various directions and to various distances what was, not long ago, a comparative entity. It is increasingly necessary to classify the developing countries in a way that will most faithfully reflect the main directions of their mounting differentiation.

* * *

Over the last few years scores of classification variants have been suggested in scientific literature. They differ in initial theoretical premises, methodologies, purposes, and the details and thoroughness of various criteria. Depending on the prime criterion adopted, the developing countries can be classified in various groups, which may overlap and intersect.

In Marxist studies, besides the generally accepted and most widespread differentiation of the developing countries according to orientation—socialist or capitalist—there are at least six more basic criteria for grouping them. One of the most frequently employed is the level of the productive forces. This criterion has been most thoroughly studied and interpreted in a monograph by L. Gordon, V. Tyagunenko, L. Fridman, *et al.*, called *The Typology of Non-Socialist Countries* (Moscow, 1976).

The following two classification criteria are associated with the two main approaches to the world of developing countries as a specific socio-economic entity. If the accent is placed on the

diversity of socio-economic structures, the organising principle in grouping countries is the relationship between the various structures. If emphasis is placed on the dependent nature of development, the decisive role being assigned to impulses from outside, the typology is, logically enough, based on the position the liberated countries concerned occupy in the international capitalist (or world) economy or, more narrowly and more specifically—on the world market.

Another classification group, which usually stresses the special role of the superstructure, regards socio-political or purely political characteristics as predominant. With such a method of grouping, in our view, the composition of countries belonging to one type or another is especially unstable and volatile; moreover, the criteria are often somewhat subjective and require constant correction.

The size of a country is another important characteristic. Obviously, relative indices must be correlated with absolute ones, such as population and economic pontential.

The developing countries are most frequently grouped according to a criterion whose inadequacy in characterising basic socio-economic processes is most apparent: by continents and regions. Of course, one or several prime types can be singled out in every region, but this approach offers a very approximate picture, scatters countries with related socio-economic characteristics over various regions, and thereby minimises the real extent of actual differentiation of the developing countries. The only serious argument in favour of such a classification is the convenience of using generalised statistical data of the United Nations and its regional commissions.

Some works of recent years reveal a desire to approach the classification of the developing countries on an integrated basis. An important step in this direction was made by a monograph prepared by a team of authors from the Institute of the World Economy and International Relations of the USSR Academy of Sciences under V. Tyagunenko, R. Avakov and K. Maidanik.[1] This book advanced the principle of the multiplicity of typologisation systems (criteria) and offered several classification variants. However, the three main criteria presented in the book (level of economic development, socio-economic structure, and political regime) seem inadequate for characterising the main processes that differentiate the developing countries.

Yu. Dmitrevsky[2] and N. Dlin[3] base their integrated classification of the developing countries on the principle of combining social orientation, level of capitalist development and economic specialisation.

Let us try to outline, as a first approximation, the main directions along which the typology of the developing countries may be further elaborated.

* * *

The demand for a generalised, synthetic picture of the developing world is ever more imperative. A classification is required that will not be tied to a restricted analytical task and will serve a diversity of purposes, making it possible to reveal differences in laws, trends, and prospects in the increasingly differentiating components of the former colonial periphery. There is a contradiction between the need for a general classification scheme and the diversity of socio-economic features according to which the countries can be lined up in series of different lengths and arrangements. The difficulty of elaborating a typology for this group of countries lies in the impossibility of relying on a single, main criterion capable of distinguishing it from other countries, and especially of singling out groups within it.

In our view, the direction in which the typology of developing countries has been developing—the advancement of new, mutually complementary or competing variants of partial classifications—has largely exhausted its possibilities. The way out, apparently, lies in evolving a set of mutually correlated criteria and building on their basis a multi-dimensional rather than linear classification scheme. This was the method adopted by the authors of *The Typology of Non-Socialist Countries,* who studied the position of 85 countries (according to 31 indicators). But the task they tackled was of a different nature, insofar as the indicators were referred, with greater or lesser grounds, to a single criterion, albeit a comprehensively interpreted one. It is difficult to develop a comprehensive typology, since it is based on criteria of various quality, which cannot be reduced to a single characteristic.

A comprehensive typology must help show the uneven development, not only of individual states in the world capitalist economy, but also of various aspects of their social and economic systems. A multi-dimensional classification scheme will make it possible to constructively utilise the technique of futurological analysis, set possible limits and stages of socio-economic change, relate specific tasks to a temporal framework, define priorities, at least for the main groups of new national states, and suggest scientifically substantiated scenarios of development. This is a component of the more general task of determining the general prospects of the socio-economic development of "third world"

countries on the basis of apparent trends in their own and world development.

The approach to developing a comprehensive classification scheme can be divided into five stages. The first proposes a set of criteria which would seem to meet the following requirements: they should embrace in the aggregate all features of the developing countries that distinguish them from the socialist and capitalist systems, and individual countries from each other; they should be stable, long-term and reflect primarily objective features and processes; there should not be too many criteria of more or less the same significance, otherwise the picture will be unencompassable. Since each criterion already includes a certain complex of different kinds of features, it is difficult to pass directly from criteria to statistical indicators. Intermediate links are required, which we shall call sub-criteria.

The second stage is the breaking down of the basic criteria into sub-criteria. They can also be subjected to the above-mentioned requirements, with the clarification that each sub-criterion should provide for a methodology of more or less immediate quantitative expression. At this stage, the sub-criteria set forth in the subsequent discourse cannot be regarded as final.

The third stage is the selection of statistical indicators for sub-criteria. They can be expressed by either a single sufficiently representative statistical index or by a set of mutually complementary indicators. In the latter case, a method of aggregation must be found. Some quantities will have to be established on the basis of expert evaluations.

The fourth stage is the classification of countries according to the adopted criterion, and the compilation of sets of partial classifications in which the same countries are naturally joined in different groups. The boundaries between groups may in many cases prove nebulous. Nevertheless, international practice offers a number of empirical devices for drawing boundaries: of course, all boundaries are arbitrary, and in every group there are "nuclei" and "trains", where they may overlap.

The fifth stage is the elaboration of a generalising typological scheme in which the resultant groups are formed according to the totality of most significant features relating to different criteria. Obviously, the mathematically possible number of combinations according to different criteria and sub-criteria may be greater than the number of countries classified. This is only natural, since each country is in its own way inimitable and unique. In the final analysis, however, there are not so many significant combinations of features for grouping the countries.

As a result, the developing world may be classified into a series of component groups comprising the main nuclei and the

transitional areas between them. This structure is open to correction and is sufficiently flexible to reflect the movements of individual countries and the uneven development of various economic and social processes. Such a classification obviously does not preclude the subjective element in evaluating the place of different developing countries according to various criteria. But in our view, it more clearly defines the boundary between objective data and the subjective evaluation of the researcher, formalises the classification process, reveals the strong and weak points of the typology, and at the same time is open to criticism and improvement.

* * *

Now that Soviet and foreign authors have scores of criteria and variants for constructing general and partial classification schemes, the problem is not one of looking for new criteria, but of selecting the most meaningful ones which form an integrated and well-balanced complex. Each criterion must be formulated in such a way as to emphasise its analytical character and connection with the main trends of world development. As we see it, these requirements can be met by the following five criteria.

Social orientation. This criterion, which is extensively employed in Marxist works, classifies the newly free nations according to the orientation of their social development towards one of the main world systems—socialism or capitalism. A choice in favour of the non-capitalist road manifests itself, in the first place, in the sphere of politics and ideology and only subsequently finds expression in the basis, especially in backward countries where pre-capitalist forms of production predominate. Countries of socialist orientation can, in turn, be divided into those oriented on scientific socialism and other countries following the non-capitalist road; countries of capitalist orientation, into those where the dominant forces have declared their capitalist choice (or where it is clearly seen in practice), and countries being drawn in one way or another to the road of capitalism.

Structural characteristics. The difficulty of classifying the developing countries according to this criterion is due, in the first place, to the endless variety of structures. The first sub-criterion reflects this in generalised form. It makes it possible to define the correlation (separately according to the composition of the gross domestic product [GDP] and to employment) of modern dynamic structures: state, foreign and national capital (modern forms of industrial capital, which in some countries are evolving into monopoly), on the one hand, and various combinations of

pre-capitalist structures (frequently intertwined with the lower forms of industrial capitalism, to say nothing of antediluvian forms of capital), on the other.

The second, no less important but much less apparent, distinction passes within the totality of modern structures. In the final analysis, it can be reduced to singling out the system-forming structure or structures as the case may be.

The main unresolved question is which structure possesses sufficient potential for integrating the economies of the developing countries and overcoming the fragmentation of the process of reproduction. Obviously, there can be no single answer for all the countries involved. A system-forming role can obviously be played by either the state sector relying on economic regulation and planning on a national scale; or by private capitalism gradually introducing market relations into all the economic pores of the society; or (most often) by some combination of both. The structural development and evolution of the mixed structure will greatly depend—and despite the vagueness of the main trends already depend, on these variants.

The structural development in the developing countries is subjected to contradictory external influences due to the role of foreign capital in reproduction. The dividing line (which is often also fairly vague) passes between the countries where national economic structures play an integrating role in the economy; where control of various national classes, strata or groups is expanding over economic, as well as social life in general; and the countries where the decisive role belongs, as in the age of the "old" colonialism, to foreign capital. Foreign capital, which draws ever new natural and manpower reserves into its economic activities subordinates national private capital and even makes use of pre-capitalist structures, forming a more or less extensive zone of economic activity about itself, does not necessarily perform an integrating role in the given economic organism.

Thus, the difficulty of giving a structural characteristics of the new independent states lies not only in their diversity and share in the economy, but also in the fact that in different countries the same structures play different roles and often represent diametrically opposed socio-economic development trends.

Despite the diversity of traditional socio-economic structures, their sheer link, inertia and inability for self-development are the prime features which so far make it possible to unite the developing countries into a single political-economic category. Modernisation of these structures will inevitably proceed in different directions, creating different transitional relations of production and combining traditional and modern structures in different ways. The number of such combinations is very great,

which in itself predetermines the differentiation of the young nations.

Level and type of the development of the productive forces. This aspect of differentiation is most apparent and has been thoroughly studied. It rests on the most extensive statistical base.

It seems most expedient to analyse this case in three directions. Let us adopt as the first sub-criterion per capita production and consumption. Per capita income (product), which indirectly characterises the achieved labour productivity for society as a whole can be the main (or even only) index here.

The level of transition from pre-industrial to industrial forms of work (including agriculture) can serve as the second sub-criterion. The degree of industrialisation can be expressed in terms of non-statistical indicators (proportion of industrial branches, labour productivity in industry, index of machinery available to labour in different branches, etc.). Detailed classification of the developing countries according to this sub-criterion requires the collection and interpretation of vast statistical data. However, for a tentative scheme it is possible to use the degree of differentiation of the branches of the economy primarily bearing in mind the share of the manufacturing industry in the gross domestic product.

The third sub-criterion is the country's participation in world scientific and technological progress and its ability to adapt types of production and economic methods in keeping with the requirements of the scientific and technological revolution, at least in some sectors of the economy. Of course, in most developing countries the absolute value of the indicators characterising these processes is very small if not zero. This, however, does not diminish the importance of this sub-criterion in any long-term methodological scheme.

The level of economic development, as a criterion, clearly displays the trend towards greater differentiation of the newly free countries. The gap is growing not so much between mean statistical indicators of the developed and the developing countries as between individual countries and groups of countries among the latter.[4]

	Developed capitalist countries	Developing countries	Developed capitalist countries	Western Europe	Latin America	Middle East	Africa	South and South-east Asia
1950	10.3	1	15.7	9.5	3.7	...	1.3	1.0
1960	11.5	1	18.6	13.3	4.0	3.1	1.4	1.0
1970	13.4	1	24.6	18.9	4.9	3.8	1.5	1.0
1975	11.6	1	26.0	23.6	5.5	7.4	2.0	1.0

Position within the world capitalist economy. Although many researchers have thoroughly studied the special place of the developing countries in the world economy, as a criterion this requires some clarification.

Apparently the most comprehensive and substantive criterion in the sphere of external economic relations of the developing countries could be their dependence upon the main centres of world capitalism, expressed in the quantitative (degree) and qualitative (character) aspects, inequality in international economic relations. The difficulty, however, is that, in the light of the general trends of development of the world economy, the political and economic categories of economic dependence and independence are in need of certain reappraisal. Today, it is much more difficult to clearly define (to say nothing of expressing quantitatively) the economic dependence of many developing countries than in the colonial period, or even during the first years of independence.

It is necessary to distinguish between the relations of interdependence characteristic of the world capitalist economy in general which will increase, and the specific relations associated with the special place of the developing countries in the world capitalist economy. A number of Marxist scholars (E. Primakov, T. Szentes) suggest that the position of these countries in the world capitalist economy should be defined as assymetric dependence. As I see it, this is a step forward as compared with the abstract dependence-independence counterposition or the thesis of one-sided dependence. In the economic ties between developed capitalist states and a large group of developing countries the dependence is two-way in character, although the influence of the main centres of world capitalism obviously predominates. However, the introduction of a new concept does not seem to completely solve the criterion problem. Firstly, there remain many countries in the developing regions whose one-way dependence upon capitalist countries is obvious. Secondly, the relationship of some of the small developed capitalist countries to the main centres of world capitalism is in a sense also assymetrical. Thirdly, the category of dependence in this variant does not provide a direct outlet to the operational level.

On the one hand, there are laws of the world capitalist economy which consolidate the position of the lagging countries as an exploited, dependent periphery. On the other, the developing countries are fighting for economic independence, relying on the conditions and laws of the present epoch. What is the resultant? Is the dependence of the liberated countries as a whole, separate groups, and individual countries growing or decreasing? It is

impossible to answer this question at the level of general reasoning. Neither does statistics provide a direct answer. Extensive foreign trade, movement of capital or international repercussions of the scientific and technological revolution, taken by themselves, mean nothing. They can equally illustrate the progressive trend of envolving the given country in international division of labour, with its immediate and potential economic advantages, or the negative trend of weakening the economy and subordinating it to external forces.

The political and economic categories of the economic dependence of the developing countries and their position in the world economy are not identical, although they are interrelated. Dependence is a consequence of historical heritage and a variety of aspects of contemporary socio-economic realities in the new independent states: their orientation, formation processes, specifics of the production forces, and links within the world economy. Their position in the capitalist world economy is a reflection of the operation of both opposing trends mentioned before: growing dependence as well as utilisation of the advantages of the international division of labour.

The diverse statistical indicators of the developing countries' external economic links can more or less fully define their position in the world economy, but taken separately they offer no idea of this or that country's dependence. For a qualitative assessment of the special place of the new nations in the world economy it is necessary to go beyond the framework, not only of the suggested sub-criteria, but of the developing countries' world economic relations, their comparison with the reproduction process, and analyses of the direct and feedback links between their domestic economic processes and external economic contacts. Hence the aggregate of sub-criteria presented below is an attempt to arrange and logically organise data on the developing countries' external economic ties. The suggested sub-criteria are useful for determining the main features in the differentiation of the developing countries according to their position in the world economy. To describe it let us take the following main aspects.

Firstly, the general indicators showing the inclusion of the given country's economy in the international division of labour (share of exports and imports of commodities and services in the GDP correlated to the absolute size and significance of the domestic market).

Secondly, position on the world market (the main indicators—the diversification and commodity structure of exports and the nature of export markets—must be correlated with the economic role of imports, dependence of real accumulations on the import

component, the dynamics of "trade conditions"). Thus, some developing countries are rapidly increasing exports of industrial goods; others export raw materials, the demand for which is determined by promising development prospects of the world economy; some export raw materials the need for which is shaped by traditional demands; still others specialise in exporting international services, etc.

Thirdly, of importance to some countries is their participation in international migration of workers. Some developing countries are exporters, others are importers.

Fourthly, their place in the international movement of capital (the relationship between exports and imports of capital and incomes deriving from it, the role of external financial resources in the reproduction process). On one pole stand countries that fully finance accumulations from internal sources and even export capital; on the other, are countries whose consumption, to say nothing of accumulation, depends upon external resources; between the two lie a number of intermediate stages.

Fifthly, the influx of knowledge and technology from abroad (scientific and technical information, patents, know-how, students studying at universities abroad, etc.).

This list could obviously be continued, but it should be enough to show the general differentiation of the developing countries according to their position in the world economy. Grouping them according to the indicated sub-criteria will make it possible, at the next stage of analysis, to draw conclusions regarding degree of exploitation by foreign monopoly capital, the balance between commodity and financial flows, susceptibility of the reproduction process to external influences, ability for external economic manoeuvring, and other elements constituting the crux of the problem of dependence.

But already now we can draw the conclusion that the developing countries not only reveal ever new forms of involvement in the international division of labour but also noticeably differ with respect to the main centres of the capitalist world economy. On the top floor are countries whose economic dependence is not as total as before: they have managed to utilise the structural changes in the world economy to their advantage, occupy advantageous and comparatively stable positions on the international market, become major exporters of capital, and achieve a degree of redistribution of the world surplus-product. On the lower floors are states the very existence of which depends upon the influx of external resources in one form or another, since production does not satisfy even minimum consumer demand.

Economic potential. Unlike the level of economic development, which is characterised mainly by relative indicators, the potential is represented mainly in absolute terms of a country's size and resources.

The need to have economic potential as an independent criterion is, among other things, necessitated by the fact that the link between the level attained and the possibilities of raising it in the foreseeable future is frequently ruptured: some countries, whose per capita income (and other attendant indicators) is in the top bracket, are developing slowly, and vice versa.

Evaluation of economic potential should rest on a complex of geographic, demographic and specifically economic data as well as on the degree of their correspondence both to each other and to the apparent main trends in the development of the world productive forces. In each case the potential may be assessed as high, medium or low. Let us try to establish the main sub-criteria reflecting its level.

The first sub-criterion is the size of the population, which, in considerable measure, determines the overall scale of a country's economy. All other things being equal, a large country has a relatively greater potential, is less dependent upon external factors, can set up closed production cycles and orient mainly on the domestic market, and finally, allocate funds for setting up its own scientific and technical potential.

The second one is natural resources, their quantity, relative value, composition and availability. In evaluating a country's position according to this sub-criterion one must take into account renewable resources (land suitable for cultivation, fresh water) and non-renewable (mineral) resources, territorial configuration, geographic position (climate, sea frontiers, etc.). Classification according to this sub-criterion should distinguish between the countries with unique (and accessible) resources, the countries with certain important resources, and the countries poor in resources (or with unexplored or inaccessible resources). Advantageous geographic position can operate as a kind of natural resource (especially in the case of small countries).

The third sub-criterion is leading structural characteristics, in the first place, the relationship between existing natural, material and technical resources and able-bodied population. Structural characteristics, which express the complex of socio-economic and demographic conditions, make it possible to determine whether rapid population growth can aggravate problems of employment, production and non-productive accumulations, etc., or it is an important source of development. Here countries can be classified

according to relatively balanced productive resources (manpower, natural, material and technical resources); countries with appreciable and perpetual imbalance in these resources; countries with acute and mounting disproportions in available production resources. Self-sufficiency in food and energy resources is of special importance in evaluating the balance.

The fourth sub-criterion is reproduction indicators: production assets, accumulated wealth that can be used for economic development (e. g., gold, currency reserves), the mass of accumulation, insofar as it is conditioned by its rate, etc.

Differentiating the developing countries according to economic potential is not easy. There is no doubt, however, that they differ substantially and even greater changes will occur in the years to come.

Such are the main prerequisites for classifying the developing countries. We cannot as yet offer a sufficiently thoroughly verified classification embracing all developing countries. However, we can, as a first approximation, define certain comparatively homogeneous groups of countries belonging to the upper and lower floors, the differentiation between which is most apparent. But first we must return to the question: what entitles us to speak of the developing world as an objective political and economic entity?

* * *

There are two approaches to the question. One is empirical and negative: it lists among the developing nations all those that are not referred to as socialist or developed capitalist countries. The second is a positive and theoretical interpretation of the specific features of the highly diversified socio-economic realities of the developing countries that entitle us to regard them as an entity. The criteria for distinguishing the young nations from the countries of developed capitalism or socialism can be socio-economically designated as follows: structural characteristics, level (and type) of the productive forces, place in the world economy.

Determination of the typological differences between developing countries is not a purpose in itself. It is an instrument for determining the changes they can expect in the foreseeable future. Economic, social and political development has been, and will continue to be, highly irregular. In the developing regions the mechanism and manifestations of the law of inequality, formulated by Lenin in his *Imperialism, the Highest Stage of Capitalism*, are specific in comparison with developed capitalism. The motive forces of uneven development are determined not only by the dynamics of the world capitalist economy at the stages of

monopoly and state-monopoly capitalism but also by the nature of the disintegration and transformation of the pre-capitalist structures, in different ways incorporated in the system of domestic and international production relations. What are the possible results of uneven development? How far can the differentiation of the newly free nations go? Can the differences within the group be as deep as the differences between it and the developed countries? Can one, albeit motley, political-economic entity evolve into several entities? A tentative answer to those questions reduces to the following.

A large group of developing countries exists not only as a certain entity outside the boundaries of the two world systems, but also as entity with inherent traits and features. Nevertheless, the group is not unified, not homogeneous, and at the periphery it is beginning to grow nebulous.

The notion of the developing countries as a socio-economic entity should be correlated with the picture of the ever growing complexity of the structure of the whole world. World socialism is developing. World capitalism is undergoing significant modifications. Diversity of development is increasing everywhere.

It has been noted in Soviet literature that the developing countries of socialist orientation may in time join the socialist world system as a kind of semi-socialist link.[5] Until now such transitions occurred as a relatively swift act, but this does not mean that it will always be so. Both the transitional position and direct involvement in the socialist world system pose a number of problems which defy quick and unique solutions. As more countries are involved, the ways and methods of such solutions will become more numerous giving rise to considerable differences in socio-economic structures at the socialist-oriented pole of the developing world.

In the upper echelons of the developing countries following the capitalist road one can single out several groups more or less approaching the countries of developed capitalism. Common to all of them is a relatively high per capita income and a number of related characteristics. However, the differences between the groups of the top floor are probably more significant than their similarities.

The first of these groups is the most developed countries of Latin America, which are already much closer to the countries of Southern Europe than to most of the developing countries in practically all the afore-mentioned criteria. The core of this group comprises Argentina, Uruguay, Chile, Mexico, Brazil and Venezuela. A number of small and medium-size countries of the continent are gradually drawing up to them, notably Panama, Trinidad and Tobago, Jamaica, Costa Rica, and perhaps several others. In most

of these countries the capitalist structure is not only dominant but system-forming and becoming a social mode of production; the state structure here is of a state-capitalist (and in some of them even of a state-monopoly) nature. All these countries have diversified links with the world capitalist economy. Some of them are capable of attaining the socio-economic level of highly developed countries within the coming decades. Strictly speaking, the listing of these countries among the developing world is already highly relative: they constitute one of the two main branches in the intermediate group of medium-developed capitalism (the other comprises the countries of Southern Europe and Ireland).

The second group of the upper echelons comprises a number of oil-producing nations (not all of them OPEC members). They are distinguished by high per capita income; as a rule, by an exceptionally high development potential due to their unique resources and sometimes also to their specific geographic position; very considerable exports of capital and raw materials; a peculiar combination of highly productive oil extraction and refining and attendant branches of production and infrastructure, including the social infrastructure, with vast mass of pre-industrial forms of production in which some of the most backward social relations sometimes continue to dominate. This group can be divided into two sub-groups. The nucleus of one comprises Iran and Kuwait, where relatively differentiated branch structures are rapidly forming and petroleum incomes provide impetus for the development of the economy as a whole. The other sub-group includes countries where the oil industry remains an isolated enclave in a backward socio-economic milieu: Saudi Arabia, Oman, Bahrain, Qatar, the United Arab Emirates, and others. The advance of some oil-producing countries towards developed capitalism appears much less natural which, however, gives no grounds for denying that such an advance is indeed taking place. Whatever their origins, highly productive economic mechanisms began to operate relatively recently in these countries, and the impact of high incomes is not yet fully felt. However, the high level of per capita income (often much higher than in developed capitalist countries) is an indicator of extremely important processes in the economy and socio-cultural life which, in our view, cannot be ignored.

The third, and still forming, group comprises countries which have managed to utilise a complex of special conditions in the interests of rapid economic development: advantageous geographic position, favourable situation with manpower reserves, technological and economical changes in the structure of world production and consumption. They have attracted considerable

foreign capital and managed to adjust to the international capitalist division of labour, expanding exports of industrial commodities, some of them technically highly sophisticated. Relatively high levels of general economic development have been achieved along this road only by the small city-states of Hong Kong and Singapore where modern structures dominate in the GDP and employment. However, similar developments are gradually taking shape in some other Asian states and territories (Taiwan and South Korea) of the medium echelons of the developing world.

A special place among the upper group is occupied by small and miniscule countries with high levels of per capita incomes and dominant modern modes in the structure of employment and production: Réunion, Barbados, the Virgin Islands, Guadeloupe, Martinique, the Netherland Antilles, Surinam, New Caledonia, and others, all with populations of under half a million. Such categories as national reproduction mechanism, national scientific and technical potential, differentiation of branch structure, and others, are simply inapplicable to these countries. They have managed to attain high levels of per capita income only by incorporating the whole domestic economy in international capitalist division of labour. Each of them possesses certain favourable prerequisites. The spheres in which they specialise include mediatory commerce, transit, tourism, efficient plantation farming. As a rule, these countries attract substantial foreign investment.

Several specific groups have emerged in the lower echelons of the developing world. All these countries are characterised by low and slowly rising average per capita income, which as a rule is incapable of providing even the minimum of subsistence for a greater part of population. In most countries traditional structures dominate universally in employment and production. National capitalism has emerged as an independent economic structure in only the largest countries, where the size of the market provides the soil for its formation. Regular upheavals occur in the economic development of many of these countries when the influx of resources from abroad becomes a condition not only for expanded but even for simple reproduction. The significant natural resources which some of these countries possess are neutralised by serious economic imbalances and intensive demographic growth. However, considerable differentiation is apparent here too, mainly according to the nature of world economic links and economic potential. Two groups can be classified among the nations listed by the UN as the most backward. These are, firstly, countries lacking in resources the economies of which are of a fairly closed nature (Burundi, Upper Volta, Lesotho, Ruanda, Bhutan, Nepal, and others). Secondly, there are countries possessing certain resources

and participating more or less actively in the international division of labour: Benin, Zaire, Sudan, Uganda, and others. A third group comprises large countries with modern industries and enterprises playing an important part in the economy, with a fairly developed domestic market and fairly extensive participation in international economic ties, and recipients of major subsidies and loans. Nevertheless, the significance of the great absolute dimensions of a number of elements of their economic potential is reduced by imbalances in certain important production resources, or even the absence of any significant resources or insufficient rate of accumulation. These are Pakistan, Indonesia and, with certain reservations, India.

India occupies a special place in the developing world. The exceptionally great size of the production machinery, substantial accumulations, age-long cultural traditions, a long period of development in bourgeois relations in cities and areas of intensive agriculture, and vast resources in the hands of the government, have created great opportunities unavailable to the overwhelming majority of developing countries. Thanks to all this, a country with one of the lowest per capita incomes in the world and occupying a low place in various classification schemes, possesses—alongside outdated forms of production, labour, capital, consumption, way of life, value orientations, etc., embracing hundreds of millions of people—large enterprises manufacturing means of production. India has launched satellites, developed nuclear power engineering and produced a galaxy of brilliant scientists, including winners of the Nobel and other international prizes.

And yet, despite the specific ways and possibilities of development of large countries, they form, together with the least developed nations, a zone in which the most difficult problems of the developing world are, and will apparently continue to be, most acute for some time to come. They account for more than 55 per cent of the population of the developing countries.

To sum up, it should be noted that there is great variety not only in the way different countries and groups of countries move from one position to another but also in the changes in their economic, social and, especially, political development. There are great differences in the changing levels of productive forces, relationships of socio-economic structures, the degree and nature of dependence. Although these indicators are interrelated, divergencies and considerable lagging are inevitable. The line-up of developing countries will stretch not only in the level of economic development, where the process is most noticeable and can best be measured, but also in other no less important criteria. The very movement of these states in time and economic space puts forward fundamentally new problems associated with the choice of road

and the diversity of possible solutions in the sphere of economic and social strategy. The role of different groups of developing countries in the international division of labour will change towards a greater specialisation relying on a more complex structure of the productive forces and considerable diversification in the system of technological, scientific, economic, financial and other ties.

By the end of the century most of the countries referred to today as developing will probably continue to retain their specifics and distinctive features, despite inevitable changes in level of development, forms of dependence and interdependence, and relationship of structures. But differentiations within this category will apparently grow deeper and differences between different countries and typological groups will increase. The division between the "developed" and the "developing" worlds will, in our view, be replaced by a diversified and much more fragmented structure. This will, in many ways, be determined by many-faceted processes taking place within the developing countries, changes in the world, and also the development of the earth's ecological situation and resources.

NOTES

[1] *The Developing Countries: Laws, Trends, Prospects,* Moscow, 1974 (in Russian).

[2] Yu.Dmitrevsky, *Africa. An Outline of Economic Geography,* Moscow, 1975 (in Russian).

[3] N. Dlin, *Specifics of Socio-Economic Development of the Non-Socialist Countries of Asia,* Moscow, 1978 (in Russian).

[4] Estimated according to *UN World Economic Survey,* 1963, pp. 20-21; *UN Yearbook of National Accounts Statistics,* 1976, Vol. II, pp. 3-9; *UN Statistical Yearbook,* 1977, pp. 742-744.

[5] S. Tyulpanov, *Outline of Political Economy. The Developing Countries,* Moscow, 1969, p. 8; V. Tyagunenko, *International Division of Labour and the Developing Countries,* Moscow, 1976, pp. 252-253 (both in Russian).

State Sector in Countries of Socialist Orientation

GLEB SMIRNOV

There are now some twenty independent nations of Africa and Asia that have adopted a socialist orientation. Algeria, Guinea, Congo and Tanzania have many years of experience along that road; other African countries—Angola and Mozambique in the south, Ethiopia in the east, Guinea-Bissau and the Cape Verde Islands Republic in the west, and others—are still building up their initial experience in non-capitalist transformations relying on state sector of their economies.

Thus, the state sector in developing countries of socialist orientation is not something unique but a fairly widespread social phenomenon requiring theoretical interpretation along a variety of lines, notably regarding its impact on socio-economic development and political stability.

In this connection the following three questions should, in our view, be considered: 1. What is meant by "the state sector"; 2. The socio-economic character of the state sector (as an economic structure); 3. Possible ways of development of the state sector and its influence on the political superstructure.

The first question has two aspects: the correlation between the basis and superstructure in countries that have opted for the non-capitalist road, and the approach to defining the role of the state sector in their national economies.

Revolutionary-democratic government as part of the political superstructure originates and is taking shape in the conditions of a variety of modes of production characteristic of African and Asian

countries. The diversity of modes of production gives rise to a wide range of fairly diversified types of political superstructures in developing countries, including pro-imperialist regimes. State enterprise develops to a greater or lesser degree under all these regimes, but only in the countries of socialist orientation do the formation and development of the state sector represent a process of formation of elements of an economic basis corresponding to a revolutionary-democratic political superstructure.

Gradually, over a long historical period, state and cooperative forms of ownership begin to determine the basic features of social relations.

In these conditions, the enterprise activities of the state in developing countries cannot, in our view, be regarded solely as a basis or superstructure phenomenon. As a result of state enterprise and activities aimed at regulating social and economic life in developing countries of socialist orientation, there develops a purposeful (albeit frequently complex and contradictory) process of interaction and interpenetration of the state sector (as an element of the economic basis) and revolutionary-democratic government (as a part of the political superstructure). Usually, especially in the first stages of non-capitalist development, the political superstructure emerges as the leading element of this system. However, as the basis strengthens it has an ever greater impact on the superstructure, on the character and trends in state economic policies. This is the essence of this new phenomenon in the social life of developing countries.

The state sector of the economy in developing countries is frequently taken to mean the aggregate of state (including mixed, state-controlled) enterprises of the productive sphere (industrial, agricultural, elements of the economic infrastructure, commercial). In our view the state-sector concept in the economy should also include one more form of state ownership, elements of the so-called social infrastructure: schools and other educational establishments, hospitals, clinics, kindergartens, etc., as well as public housing stock. For it is precisely state ownership in the non-productive as well as the productive spheres, the state's concern for the development of industry and the restructuring of social living conditions of the masses at large, that represent one of the prime elements of development of the former colonies and semi-colonies towards socialism. In this respect it is important to stress that whereas in the productive sphere (especially in industry and the economic infrastructure) the bases of the state sector are usually created through the nationalisation of private property, the state sector in the non-productive sphere has, as a rule, to be built up from scratch through investments of the state.

Furthermore, it would be correct to include in the definition of the state sector of the economy of developing countries its financial base, i. e., the monetary resources mobilised and used by the state to expand the scope of state enterprise and develop the social sphere of the economy. These financial resources, which are build up as a result of the functioning of the state (in its two capacities)—as collective entrepreneur (incomes of state enterprises, credit resources of state banking institutions) and as a body of administration and management (taxes, duties, revenues) and representing the aggregate monetary fund of state accumulation—determine the possibilities of further formation of production assets and elements of the social infrastructure belonging to the state.

We thus see the state sector in the economy of the developing countries as an aggregate of state-owned enterprises and projects of a productive character (material production sectors, transport, communications, commerce), as well as state-owned institutions in the non-productive sphere (educational, scientific, medical, etc.). The impact of state enterprise on the reproduction process (in the aggregate of its material and social aspects) is determined not only by the scale and structure of the operating capital in its hands, but also by the amount of capital that can be utilised by the state for accumulating and solving social problems. The economic and social development funds must be included in the definition of the state sector.

Summing up the first of the questions formulated at the beginning of the article—the content of the state sector concept as applied to developing countries of socialist orientation—three elements must be emphasised. First, the state sector in their economies is not just a transition from private to collective forms of economic management, but an intricate interaction and intertwining, a merger of the activities of the state as a collective entrepreneur and a national body for political and economic administration and management. Second, in countries of socialist orientation, the state participates directly in the formation and development, not only of the productive, but also of the social sphere of the economy. The difference between countries of socialist orientation and developing countries oriented on capitalism is not so much in the scale of state enterprise in productive sectors as in the state participation in the development of the social, non-productive sphere of the economy. Third, the characteristics determining the role of state enterprise in the system of social reproduction includes, along with the quantity of operational capital, the size of the economic and social development funds (the accumulation funds in the first place) at the disposal of the state, and drawn from other sectors of the economy.

Without taking due account of these aspects it is impossible to answer the second question regarding the character of the state sector in developing countries of socialist orientation.

There are two points of view on the socio-economic character of state ownership and the state sector in countries of socialist orientation.

Representatives of the first viewpoint hold that the state sector in all developing countries represents a state-capitalist mode of production. However, they ignore differences between countries of different socio-economic orientation in character of government, purposes and trends of state economic policy. Representatives of the other point of view hold that the state sector in the economies of countries of socialist orientation represents a kind of transitional form. In this connection it is natural to ask: What is the essence or basic content of that transitional form? Where does it begin and end?

Obviously, the socio-economic character of state ownership is determined by the type of social relations they cater for in the general economic system. It is from this point of view that we shall attempt to examine the role of the state sector in the economies of countries of socialist orientation (bearing in mind the interpretation of the content of this category set forth above).

Basically, the creation of a state sector inevitably restricts the sphere of activity and opportunities of operation of private capital, it bears elements of negation of capitalist private enterprise. The exception is when the state nationalises enterprises operating at a loss, invests in industry or businesses unprofitable for private capital (for example, transport, communications and other elements of the economic infrastructure without which material production cannot expand), or through partnership with private capital guaranteeing a favourable investment climate. In countries of socialist orientation, the state sector absorbs a wide range of industries and activities, including those which are, or could be, profitable investment spheres for private capital. This is in the first place true of the processing industries. Thus, the state sector accounts for more than 90 per cent of the output of manufactured goods in Algeria, and more than 50 per cent in Tanzania.

Countries of socialist orientation utilise their financial system (development budgets) and credit and banking levers to redistribute accumulation in favour of the state sector. In this case expanded reproduction of private capital may, and usually does, occur, but principal and decisive here are the higher development rates of the state sector as compared with the private (both national and foreign).

Restriction of the sphere of operation of private capital and transformation of the state sector into the main factor of economic

development, the material base of the revolutionary-democratic government, are the content, the essence of the road which has been called the road of socialist orientation. In this sense, from the point of view of the impact on the reproduction of property relations, the state sector in the economies of countries of socialist orientation differs from the state sector in countries of capitalist orientation; it does not possess features inherent in state capitalism, that is, those which directly and immediately serve the reproduction of private capital.

As emphasised before, the very composition of state property in countries of socialist orientation is specific as compared with other developing countries. A large portion of state funds here is appropriated for the non-productive sphere of the economy. The state makes use of its position as collective entrepreneur, and of its bodies of government and administration, to take these resources from the production sphere, among other things by taxing private businesses, and channel them into the social sphere. The amount of state investment in the development of the social sphere is indicated, for example, by the following figures: we estimate that in 1970-1973, Algeria allocated 17 or 18 per cent of state investments for these purposes, while in Tanzania more than 13 per cent of state investments went into that sphere under the 1969-1974 plan.

However, the new aspects introduced by the state sector in the reproduction of social relations in countries of socialist orientation go beyond its immediate impact on property relations; it restructures relations of exchange and distribution and, in the final analysis, influences the scale of exploiter relations in society.

From the methodological point of view it is necessary to examine both the impact of the state sector on primary relations of exchange and distribution and the factors relating to the redistribution of the national income and the gross national product. From the practical point of view it is, apparently, expedient to distinguish three main forms of relationships of the state sector.

The first is its direct participation in the formation of worker incomes and consumption. Of primary significance here may be: the scale of employment (including the creation of new jobs as a consequence of state investments); the wage rates and working conditions at state enterprises (as compared with private); the creation and development of the social infrastructure as an independent part of the state sector and at state enterprises of a productive character.

The second aspect is business and financial ties between the state sector and private capitalist enterprises within the country and abroad. The third is its relations with small-commodity and

semi-natural holdings. Of prime importance in these relations may be the ways (private or state sector) and conditions (prices, etc.) of supplying enterprises of the state sector with raw materials, primary products, fuel, energy, etc.; the marketing of produce (commodities and services) by enterprises of the state sector; the level of prices, tariffs and other conditions in sales to other enterprises of the state sector, state organisations and private businesses; participation of the state sector in the realisation of produce, including the products of the work of isolated commodity producers (replacement of the system of commercial intermediaries by the state sector); concentration of exports and imports in the hands of enterprises of the state sector; organisation of a state credit and banking system; opportunities and conditions of providing credits for enterprises of the state and private sectors of the economy.

Despite the limitations of statistical information of a socio-economic character, several groups of indicators can be singled out which make it possible to assess the character and trends of the impact of the state sector (within the complex of all actions and measures of economic policy) on relations of the exchange and distribution in developing countries of socialist orientation.

The first group of these indicators refers to the social structure of incomes and consumption. It includes: changes in the personal incomes of different groups of the population; elimination of the sharp differences in the remuneration of different categories of workers and employees, which are typical of former colonies and semi-colonies; establishment of a guaranteed minimum wage; introduction of maximum salaries for civil servants and employees of state enterprises and offices; changes in the level and structure of personal (individual) consumption by different strata of the population, especially the poorest and the richest.

The second group includes indicators characterising the formation process of the so-called social consumption funds: overall state expenditures on the development of the social sphere, investments in the social infrastructure, organisation of free medical services, primary school, secondary and higher education, pensions, etc.

The third group of indicators relates to processes of reproduction of capital in different sectors of the economy. They can be assessed according to the size of banking accounts of the state and private sectors of the economy, according to the distribution of credits between them, and especially according to gross investments of the state and private sectors of the economy.

Since it is impossible to analyse all these indicators with respect to a large number of countries of socialist orientation in one article, let us attempt to show them on the example of Algeria, a

country which has accumulated probably the most extensive experience in socio-economic transformations as a result of socialist development.

Minimum pay for agricultural workers was established back in 1964; by the end of the 1960s the range of pay for people working in industry, construction, transport and communications and credit and banking institutions was substantially reduced and, as a rule, did not exceed an 8-fold gap (between unskilled hands and top executives), an upper limit was set for civil servants.

As in other countries of socialist orientation, the state assumed the main concern for the development of the economy. Already by the beginning of Algeria's first four-year economic development plan (1970-1973), the state's share in total investments in the economy approached 90 per cent, and, disregarding external resources, even more. Since then the state sector here has accounted for an overwhelming share of investments in the country (according to our estimates not less than 90 per cent).

A large portion of these resources are channelled for the development of the social sphere and the formation of social consumption funds. According to our estimates, based on official Algerian statistics, for these purposes the state used from 15 to 20 per cent of the commodities and services produced in the country in the years of the first four-year plan.

An analysis of these data makes it possible to assert that the essence of the transitional character of the state sector of the economy of developing countries of socialist orientation consists in that, first, the possibilities for expanded reproduction of private capital (especially foreign) are restricted, thereby reducing the sphere of capitalist exploitation; second, the sharp polarisation in the incomes and living standards of different social groups of the population is reduced; third, social consumption funds are formed and social maintenance of the broad masses of the population is improved.

Thus, it is erroneous to interpret the state sector in the economy of countries of socialist orientation as a state-capitalist mode, because it gradually loses the features and properties of state-capitalist enterprise. It restricts rather than facilitates the opportunities for reproduction of private capital; it embraces the non-productive as well as the productive spheres of the economy; and the state finances the formation of social individual consumption funds, which is in the interests of the broad masses of the working people.

At the same time, the development of state enterprise, which primarily ousts foreign capital, both directly and indirectly facilitates improvement of the living standards of the bulk of the population and reduction of the incomes and numbers of the

propertied strata of society. Therein lies the essence of the transitional character of the state sector in countries of socialist orientation and its impact on social and economic development.

This, however, does not in itself imply that the state sector is a factor of political stability (or instability). There is no apparent direct relationship. If the state sector is used for socio-economic change consistently, but without undue haste and with reliance on broad sections of the working people, its role as a transformer of socio-economic structures tends to stabilise the political situation. The state sector operates as the material base of a progressive regime.

Undue haste in the development of the state sector and accelerated offensives against the positions of private ownership, including the positions of the mass of petty-bourgeois and non-bourgeois producers of commodities, can strengthen the offensive of reaction and create a situation of extreme, explosive political instability.

It would also be wrong to assume that development of the state sector in countries of socialist orientation is a straight road from a multi-mode economy to public ownership of the means of production, the prime element in a socialist or pre-socialist economy.

Existence of a state sector and its transformation into the main factor of economic growth means, like socialist orientation in general, no more than the restriction of private business, not its complete rejection. In all countries of socialist orientation, private capitalist activity is utilised to a greater or lesser extent in the interests of developing the economy; the state sector collaborates with national and foreign private capital, while the developing small commodity production supported by the state continuously breeds private capitalist enterprise. Private capital, national as well as foreign, seeks to utilise the state sector in its interests and subordinate its development to its selfish aims. The executives of some state enterprises and services seek to utilise state property and concentrate economic power in their hands for personal enrichment; this may sometimes result in the transformation of some of the workers of the state machinery and economic management into a bureaucratic bourgeoisie.

The international division of labour links countries of socialist orientation with capitalist countries. The former receive considerable economic and technical assistance from the latter and have to set up mixed companies with the participation of foreign capital, etc. All this tends to create opportunities for private capital to make use of state property, for some economic executives of countries of socialist orientation to enrich themselves, thus merging their interests with those of the national and international

bourgeoisie, and as a consequence of this, for a change in the character of the state sector and its impact on social and economic development. In other words, orientation of the socio-economic development of former colonies and semi-colonies towards socialism takes place in conditions of coexistence of state and private enterprise in their economies and their remaining in the capitalist world economic system. In these circumstances the question, "Who will win?" may in certain conditions be resolved not in favour of socialist development, and the state sector may evolve in the direction of state capitalism, becoming a factor of instability of the revolutionary-democratic regime. Moreover, such regressive motion of the state sector may be encouraged by political as well as economic factors, notably by the government. As the experience of some countries shows, Egypt, for example, transformation of the political superstructure may spark a rapid process of evolution of the state sector towards state capitalism. At the same time, the state sector used in the interests of private enterprise (in Egypt again, for example, financial resources of the state sector were used to strengthen the capitalist sector in agriculture) may create the socio-economic basis for the government's break with socialist orientation.

Thus, here, too, the problem of political stability is resolved in the interactions of the overall system, the main, but not only, elements of which are the economic basis, including its leading element, the state sector, and the specific alignment of social and political forces in the country, the nature and trends of development of state power.

PROBLEMS
OF WAR AND PEACE

Final Battles

GENNADY SREDIN

From the Editors: May 1980 marks the 35th anniversary of the victory over fascist Germany. In this connection, we publish a review by Colonel-General Gennady Sredin of Volume 10 of *A History of the Second World War. 1939-1945,* (Moscow, 1979), which deals with the crucial political and military developments of 1945 leading up to the utter defeat of fascist Germany and its unconditional surrender.

The Soviet-German front was still the main one even in the closing stage of the Second World War, since the battles waged there, which in scale and intensity surpassed those at the other theatres of operations, decided the destinies of many nations.

As before, the nazi Command kept the bulk of its forces (195 divisions and one brigade) on the Eastern Front. Moreover, when the Soviet Armed Forces assumed the offensive in January 1945, the German Command transferred 42 infantry, 6 panzer, 4 motorised, and one cavalry division and 5 brigades of various designations from the Western to the Eastern Front.

In an attempt to boost the fighting spirit and morale of the Wehrmacht and the population the nazi propaganda machine launched a frenzied campaign to present the military-political situation as one in which Germany would still be able to avoid a defeat. The myth was spread about a so-called "miracle weapon" due to be employed and which would allegedly ensure the victory of the German troops. Another myth spread was about an impending disintegration of the Allied coalition and a military confrontation among its members. Actually, the nazis were seeking ways to split the anti-fascist coalition and conclude a separate peace with the Western powers.

On the Soviet-German front the nazi Command amassed large forces in the crucial sectors, and, using ruthless terror and

high-pressure propaganda, forced their officers and men to put up desperate resistance.

Therefore, even in the closing stage of the war the Soviet troops had to engage in hard-fought battles to achieve complete victory.

Of great interest are the chapters dealing with the strategic operations of the Soviet Armed Forces which in 1945 extended from the Baltic Sea to the Drava River. Thoroughly analysed are the Vistula-Oder, East-Prussian, East-Pomeranian, Lower and Upper Silesian operations, the rout of the strong enemy group in Czechoslovakia and in the Budapest and Vienna sectors, the course and specific features of each operation, the authors showing their military-strategic importance and political consequences.

The crushing defeat of the enemy Berlin group is given much prominence in the volume. The battle for Berlin was the final operation of the war in Europe, one of the largest in scale and most brilliantly executed in military history. The data cited in the book gives an idea of its scale: on both sides the operation involved 3,500,000 men, 52,000 guns and mortars, 7,750 tanks, self-propelled and assault guns and 10,800 aircraft.

In planning and executing these operations, the State Defence Committee and Supreme Command exercised skilful strategic leadership. The book convincingly demonstrates the superiority of Soviet strategic art over that of the nazis, the indisputable superiority of the combat efficiency of the Soviet soldiers; their indomitable will to win, and their high morale.

Volume 10 vividly describes the great liberating mission of the Soviet Army in the countries of Central and Southeast Europe. The peoples of the countries liberated from nazi domination met the Soviet Army with acclaim. Its victories created the conditions which enabled the working people of those countries to carry out fundamental social reforms and embark upon the path of socialist development.

The authors analyse the interaction and cooperation between the Soviet Army and the people's liberation armies and detachments of the underground national liberation movement which emerged during the war. In the final operations of 1945 two armies of the Polish Army and a corps of the Czechoslovak People's Army fought side by side with the Soviet Army. Close cooperation was also maintained with the People's Liberation Army of Yugoslavia which had achieved great successes in fighting the nazi invaders. Bulgarian and Rumanian forces operated jointly with the Soviet Army as part of the Second and Third Ukrainian Fronts. A volunteer regiment of Hungarian patriots closely

collaborated with the Soviet units in the street fighting for the liberation of Budapest.

The volume presents a wealth of material on the inspiring and organising role of the Communist Party of the Soviet Union in mobilising the forces of the Soviet people for the ultimate defeat of the enemy.

The Party showed special concern for the further build-up of the fighting strength of the country's Armed Forces and the education of the officers and men in a spirit of internationalism and friendship among peoples. Soviet soldiers, who were now fighting outside the Soviet borders, went into battle with selfless courage which earned them the love and admiration of all honest people of the world. The volume contains striking examples of the humanism of Soviet officers and men displayed towards the peoples of the countries they liberated, including Germany, tells of the assistance they gave to local residents sometimes even in the thick of battle.

The book vividly shows the organising and ideological work of the CPSU on the home front. Under the Party's leadership the Soviet people were able to overcome the difficulties caused by the big losses in production sustained in the initial period of the war and achieve superiority over the enemy in the economic sphere as well. The measures taken by the Party to raise the rate of industrial production during the war ensured the Soviet Army's superiority in combat equipment and weapons over the enemy.

The authors note that during the first half of 1945 the USSR produced about 65,000 field guns and mortars, over 15,000 tanks and self-propelled guns and more than 20,000 aircraft.

Meanwhile, even while the war was still on, part of the enterprises were reconverted to civilian production, more and more liberated areas were being restored, the first steps were being taken along the path of peaceful construction.

The reader will find interesting data in the chapters dealing with the armed struggle on the Western and Italian fronts and analysing the strategies employed there. The Anglo-American forces operating in Europe enjoyed a significant numerical and technical superiority over the enemy: threefold in numerical strength, 4.6 times in the number of tanks and self-propelled guns, and 6.2 times in the number of aircraft.

The book graphically shows how the Soviet Army's successful actions influenced the Allied operations. For example, the powerful offensive by the Soviet Army in January 1945 launched earlier than originally planned, at the request of the British Prime Minister, wrecked the plans of the nazi Command and enabled the American-British forces to fight their way out of the critical situation which had developed in the Ardennes and Alsace.

The American-British troops regained the ground they had lost in the Ardennes, reached the Rhine River, forced a crossing and liquidated a large enemy group in the Ruhr area. On February 8, 1945, when the Soviet Army was 60 km away from Berlin, the Allies were able to assume another offensive on the Western Front. The fact that the Wehrmacht had no reserves and the nazi Command's fear to remove several divisions from the Soviet-German front made it possible for the American and British armies to reach the Elbe almost without opposition.

Many pages of Volume 10 recount the history of the adoption of a number of important international agreements at the Crimean and the Potsdam conferences and also at the international conference in San Francisco. They were of great political importance and were the basis of a number of concerted decisions although, by then, contradictions on many problems of the postwar settlement in the world had already begun to make themselves felt. The Soviet Union made every effort so that the edifice of world peace might be based on democratic principles and be just and lasting. The book records how in 1945 the policies of Britain and the USA, increasingly reflected the anti-Soviet line of the reactionary circles of the two countries whose main proponents were Prime Minister Winston Churchill and President Harry Truman. That marked the beginning of the cold war, and the intensive polarisation of world forces: the forces of progress and democracy adhering to the policy of peaceful coexistence, at one end, the forces of reaction, at the other.

The principled and consistent policy of the Soviet government and the decisive role of the USSR in the defeat of nazi Germany, made it possible to preserve the unity of the anti-fascist coalition in the main to the very end of the Second World War, and to win the war in Europe. The example of the anti-Hitler coalition which comprised states with different social systems is highly instructive. It shows that not only can such states coexist but even that they can successfully cooperate in the most crucial situations, such as those brought about by the Second World War. This conclusion, the authors emphasise, still retains its immense political significance.

The volume convincingly demonstrates that the victories of the Soviet Union over the fascist aggressors were due to the superiority of the socialist system. Leonid Brezhnev stated in this connection: "When the red banner, planted by Soviet soldiers, unfurled over the Reichstag, it was more than the banner of our military victory. Comrades, it was the immortal banner of the October Revolution; it was the great banner of Lenin, it was the invincible banner of socialism, the bright symbol of hope, freedom and happiness of all nations."[1]

The book concludes with documents of the Nuremberg Trial. And this is only natural, for the conscience of the peoples that suffered nazi occupation, the memory of millions of victims tortured to death in nazi prisons and concentration camps, and the memory of millions of soldiers who fell in battle for the freedom and independence of their peoples imperatively demanded punishment of the nazi ring-leaders who had unleashed the Second World War and perpetrated heinous crimes against humanity. The Nuremberg Trial has gone down in history as an act of condemnation of the ideology and policy of nazism, and of aggression and violence in international relations. Its verdict has sounded as a warning that such atrocities must never again be repeated.

The publication of Volume 10 of *A History of the Second World War. 1939-1945* is a landmark event in Soviet military-historical science.

NOTE

[1] L. I. Brezhnev, *Following Lenin's Course*, Moscow, 1972, pp. 23-24.

Detente and the System of International Relations

VLADIMIR GANTMAN

One of the prime tasks of politology is the elaboration of the concept of detente as a political phenomenon in the context of the system of international relations. The relaxation of tensions in the 1970s is a specific historic state of the system of international relations objectively bred by the basic trend in world development which, in turn, is subjectively specifically reflected in the interacting policies of individual countries belonging to the two main socio-economic systems of our time. This state of affairs in the system of international relations is indicative of the transition from cold war and dangerous confrontations between two opposing systems to political negotiations and international cooperation on the basis of the peaceful coexistence of the states belonging to those systems, of a transitional process in the very system of international relations.

Detente is neither simple nor straightforward; it is an extremely complex, diverse, in many ways contradictory, but nevertheless essentially systematic process. Many factors, objective and subjective, internal and international, social and economic, political and military-strategic, scientific-technical and cultural, legal and psychological, intertwine and clash within it. Detente, as a specific historic state of the system of international relations, already possesses a very concrete, tangible material structure, which formed prior to, and as a result of, Helsinki, acquiring flesh and blood determined by detente itself and, in turn, the international relations, documents and various types of agreements that mould its features. It is a reality of our time.

Any approach to detente, however "pragmatic" or scientific, equally presumes a sober, balanced and, mainly, comprehensive view of this international reality in all its unsimple, variegated manifestations, with both its positive aspects and its contradictions, difficulties, complications, even dangers which we have not been able to avoid, if that is at all possible.

It is hopeless to attempt to analyse detente by comparing it with idealised, artificial constructions of what it should, or could, be like. Reality inevitably demolishes such constructions.

The international life of the 1970s is much richer, diversified, more contradictory, and often grimmer, than any *a priori* constructions capable of exciting the mind or the imagination. We are dealing not with detente in general, not with a god-given detente, but with the detente that exists today on this sinful earth and with which we have to deal routinely. Optimism concerning detente and its prospects is justified only if it is rooted in a realistic, viable, scientific understanding of its real roots, motive forces, mechanisms and trends of development, in close connection with other important, determinant processes of world development.

If detente is indeed not a figment of the imagination, not a phantom of good intentions but a historic reality, it is useful to start with examining the firmness of its historic and political roots and its development in the context of the contemporary system of international relations.

The urgency of detente does not mean that we see it as an exceptional development that suddenly emerged in the specific situation of world relations of the last decade. It would obviously be wrong to confuse the long-term, underlying process of maturation of objective, and even subjective, prerequisites and conditions, the formation of the motive forces, mechanisms and trends in the development of detente temporarily hidden from direct observation, with the specific beginning of the concrete, increasingly apparent realisation of detente of the last few years, notably after Helsinki. Nor can detente as it is today be regarded as something finalised, complete, cast once and for all in a rigid mould and henceforth immobile.

As a state of the system of international relations, detente has its historic "depth", it develops and has a future in which it may obviously take different forms. Following a fairly long, complex, tortuous period of development, detente continues to change under the impact of the underlying processes transforming the world, including the new trends generated and stimulated by detente itself.

The historical roots of detente as a specific state of international relations of the 1970s lie not only in the apparent changes of

this decade. They have been developing in the historical stratum of more than sixty years since the Great October Socialist Revolution, in the consequent fundamental changes in the system of international relations. The system of international relations has been changing steadily since then, especially radically and rapidly since the defeat of fascism in the Second World War, on the basis of the substantially changing correlation of forces of the two socio-economic systems.

One of the direct results of the war was the appearance of sufficiently serious objective prerequisites and conditions for detente and the peaceful coexistence of states with different social systems. But for a number of reasons, some objective, some largely subjective, it failed to materialise, the opportunities were lost, and the world plunged into the cold war, which on several occasions brought it to the brink of a world conflict.

Mankind paid dearly for the cold war in the 1950s and 1960s, and in some ways continues to pay today, when even after Helsinki detente is fiercely attacked by certain political forces yearning for cold war times.

The cold war, however, could not undo the main trend of world development, including the development of the system of international relations, which in the 1970s again propelled us to the historic summit of detente. The time came, and against the resistance of all stagnant, sluggish forces, detente arrived on the proscenium of history as the only conceivable potential alternative of cold war, and then as a mature historic reality of our time, introducing qualitative changes in the system of international relations.

Unlike the occasional relaxational upsurges of the preceding period, the detente of the 1970s rests on an entirely new objective base, on a different international climate. Its motive forces, mechanisms and trends of development function on a different historical base.

Detente should be viewed retrospectively on the scale of the last six decades or, more specifically, the last three decades. In terms of the 1970s, and especially after Helsinki, it is obvious that, despite all difficulties and trials, detente has become a central, global international political process. It has become one of the motive forces of world development steadily transforming the system of international relations from cold war orientation to the principles of peaceful coexistence of states with different social systems. This transitional stage in the development of the system of international relations is the historic state we call detente.

To arrive at such an important conclusion we must analyse detente as an existing historic state of the present-day system of international relations.

As a historic process transforming the system of international relations detente has yielded results which are occasionally lost sight of in the flow of daily contradictory events. Nevertheless the changes are there. The turn from cold war and dangerous confrontations between states of the two systems to political negotiations and peaceful cooperation on the basis of the principles of peaceful coexistence is apparent. Even the sceptics must concede that we have advanced a long way from cold-war practices and psychology, with due account of the real and imaginary throwbacks of the last few years which tend to surface to this day in specific anti-detente action of certain political forces, including the ruling circles of some Western states. It is hard to believe that a return to the cold war, a repetition of past experiences is possible in a historical perspective.

In terms of the international situation, we are living in a different world than in the early 1970s, or even just before Helsinki. The whole international situation has improved. The system and structure of relations between states are changing. Conditions are evolving for a more radical restructuring of the whole system of international relations on the basis of the principles of peaceful coexistence of states with different social systems. New trends have appeared in world relations leading away from a new world war, towards peace, security and cooperation.

It all happened over a short historical span of time on the basis of a dynamic, extremely intense and in many ways irreversible process. Of course, not everything has been equally advanced, filled with material content and reliably assured. But all in all, it is already a tangible reality which no one can discard as non-existent.

One of the results of detente has been the *shift in the struggle and competition between the two world systems to the sphere of peaceful coexistence,* and it was largely stimulated and consolidated by detente.

The shift of the struggle between the two socio-economic systems from the sphere of political and military confrontation to peaceful coexistence becomes deeper, more stable and long-term in conditions of detente. Of course, such a long-term trend cannot develop without halts and complications due to throwbacks to force politics and nostalgic actions in a cold-war spirit exponents of which still survive in some Western countries. But the trend evolves against the background of sharply and irreversibly reduced opportunities to deal by force in world politics, and the expanding objective concern of capitalist states in promoting foreign policies in terms of peaceful coexistence.

Detente has demonstrated that the strengthening of the world positions of socialism need not objectively lead to force confrontations with capitalism; on the contrary, it can strengthen and expand relations of peaceful coexistence with the capitalist world.

Detente *promotes international security* through the development of political and economic cooperation between states with different social systems. This is one of the characteristic trends of detente, which in its first stage spread into the spheres of political and economic relations between the Soviet Union and the United States, between the Soviet Union and Western Europe. It manifested itself in the successful completion of the European Security and Cooperation Conference, which collectively summed up the political results of the Second World War, drew the line under the cold war, and opened up new opportunities for solving the key issue of our time: ensuring peace and security for all people. For the first time in European history a system of agreements was reached unanimously on the basis of the thoroughly balanced interests of all parties. The principles of sovereign equality of states and their sovereign rights were proclaimed. Prerequisites appeared for substantially expanding and promoting equitable, mutually beneficial cooperation between European states.

The strengthening of international security through bilateral and multilateral political and economic cooperation has become a sufficiently stable trend in the system of international relations. Its realisation in relations between states is the principal content of political and military detente. The potentialities for political and economic cooperation between countries belonging to different systems in the name of strengthening international security are very great.

Of course, all these new international developments must be continuously augmented on the global as well as the European level, and all states must in full measure promote the whole complex of agreements recorded in the Helsinki Final Act.

Another important result of detente is a certain *reduction of the military threat and slowing down of the arms race.* This made possible certain effective measures aimed at reducing the threat of nuclear war and the arms race, especially in the strategic sphere. Advance in restraining the arms race could in turn be a powerful shot in the arm for detente, supplementing political with military detente, an essential condition and incentive for success in political detente.

The prime tasks of military detente are the realisation of the Vienna SALT agreements and a mutual reduction of armed forces and armaments in Central Europe without jeopardising the security of either side. Unfortunately these tasks have not yet been accomplished.

Detente creates opportunities for a *settlement and prevention of a number of international political conflicts and crises.* The overall trend of recent years towards political settlement, more, the prevention of

dangerous situations in international life, has been progressing despite all aggravations and complications. If settlements of international conflicts were reached even in cold war conditions, it is certainly a practical reality on a much broader scale in conditions of detente. This does not mean that international conflicts will be overcome once and for all, but the ways and means of tackling them are clearly defined. In principle, detente creates the prerequisites and tools thereof if there is a will to prevent or settle such conflicts peacefully.

The list of concrete positive results of detente could be continued, they also include aspects which are of importance for developing countries.

The post-Helsinki period has been characterised by the m terialisation and universalisation of detente, by efforts to make the whole detente process irreversible. We can legitimately claim that, despite the obvious difficulties of the present period, we have advanced since Helsinki, perhaps not as rapidly and effectively as the active exponents of detente would have liked, but neither as sluggishly or futilely as those who have assumed the role of "detached observers", still less the direct foes of detente, would have the world believe.

We would not be realistically or scientifically thinking people if we would not attempt to use the lessons of the extensive period associated with detente, and especially the lessons of post-Helsinki development, to soberly assess the contradictions, difficulties and complications encountered by detente and the policies behind it.

First of all, it should be noted that the Soviet concept of detente, from which the CPSU proceeded at its 24th and 25th Congresses, and on which it bases its foreign policy, never regarded it as a straightforward, ascending road without obstacles or struggle, without zigzags of development. We entertained no such illusions. Life has demonstrated the correctness of the realism and sobriety of such an assessment of detente.

A scientific view of detente must be based on the idea that its practical advance is determined both by objective trends in world development, including developments in the system of international relations, and certain subjective trends displayed by various political forces, and national policies capable of influencing various specific aspects of detente at different historical stages and sometimes even the way in which objective trends manifest themselves, by virtue of their political and class character and the effectiveness of the tools of implementation. Such influences may be positive, neutral or deforming, especially when they are embodied in the policies of major Western states participating in the system of international relations.

Detente is not immune to such influences. One cannot claim that it is now determined solely by favourable objective trends. Detente can have its ups and downs, its zigzags of development.

Political struggles within the ruling elites of Western countries are in many ways determined by the conflicting interests of the exponents and opponents of detente. Sometimes, as we know, the struggle is serious and fierce. Sometimes the opponents of detente gain the upper hand, imposing on governments more "tough" attitudes that depart as far as conceivable from the policy of detente. But however sharp and irreconcilable the confrontations between these forces, their possibilities are not so great: participation in detente (regardless of how specifically) is the only reasonable option in the current historical situation. Life compels those Western politicians who fail to understand the march of history nevertheless to follow the road of detente. However, government policies influenced by anti-detente forces may cause detente to slow down and meander. Attacks by anti-detente forces in some Western countries, especially the United States, in the latest period has a destabilising effect on the system of international relations. Such things poisoned the international atmosphere.

Detente, however, has demonstrated its viability and stability. It advances thanks to its profoundly objective, historical basis, thanks to the political forces of our time, including the policies of certain Western countries, which realistically see the mainstream of history and work for the triumph of detente, for peace and security.

The Soviet Union and other socialist countries, for their part, work actively in the mainstream of detente, putting forward new initiatives. "In our foreign policy," noted Leonid Brezhnev at the 16 th Congress of the Trade Unions of the USSR, "we and our socialist allies firmly adhere to the Leninist course of peace. Developing and deepening cooperation with countries which have freed themselves from the colonial yoke, and cooperating, where this is possible, with realistically-minded circles in bourgeois states, the countries of socialism come forward with concrete initiatives directed at improving the world's political climate."

These proposals are aimed at further promoting detente, its positive content and effectiveness. Important proposals were put forward by the Soviet Union at the 34th Session of the UN General Assembly.

Detente implies the interaction, and consequently struggle, of different political forces on the international scene. This struggle naturally also involves problems of detente itself, especially its objectives, content, trends and prospects. There should be no illusions regarding the intensity of that struggle.

The dialectics of the objective and the subjective in the detente process is complex and many-faceted. It is not an academic issue. It is inherent in the very practice of detente and stems from it.

To begin with, *it is necessary to assess existing difficulties and contradictions within detente and its relation to other current world processes.*

To a degree these difficulties and contradictions are due to the restricted character of the present, initial stage of detente. The possibilities of detente are shaped by concrete historical conditions, by the correlation of forces of the two systems, by the actual correlation of forces of its adherents and opponents, by the political struggles between them at home and on the international scene.

All this is reflected in the irregularities in the development of detente, which result in distortions, deformations, misalignments, contradictions in different processes on both the global and regional levels.

In the first place, these are irregularities in time, in the rates and depth of development on the regional level. Detente is not a global process in every respect. It is global insofar as it involves relations between the two systems, problems of war and peace, strategic weapons, etc. But it is not global insofar as it involves different regions to different degrees. The levels of political, economic and military detente and the extent of the ideological struggle differ from region to region, from country to country, from stage to stage. Furthermore, all these parameters are mobile and volatile. The picture may change entirely within a short time.

In other words, the development of detente is far from a determined, automatic, synchronous process. There is no place here for either academic dogmatism, or *a priori* or mechanical extrapolations. Detente is a living, complex, irregular and contradictory process. This creates great difficulties in the development of detente, for the policies behind it.

The gap between the levels of political and military detente is a major obstacle to the development of detente as a whole. It may, of course, advance, but not for too long, especially if the gap tends to widen. But basically the gap is *dangerous*, because political and military detente is essentially a single and inseparable process. Of course, military detente cannot advance without political detente. The priority of political issues over purely military-strategic and military-technical ones is obvious. But political detente is not indifferent to military detente, and it cannot be sufficiently firm and reliable if not accompanied and supplemented by concrete measures aimed at reducing tensions in the military sphere.

Military detente could be advanced if various issues pertaining to the arms limitations and disarmament could be resolved. The 25th Congress of the CPSU defined this as the key problem of ensuring peace and security of peoples. It has a direct bearing on strategic arms limitations, the reduction of the armed forces and armaments in Central Europe and on many other issues. On October 6, 1979, Leonid Brezhnev put forward new constructive initiatives of prime importance when he stated that the Soviet Union was ready to cut the number of medium-range nuclear missiles deployed in the Western regions of the country, providing there would be no additional deployment of such weapons in Western Europe. In December 1979, however, the United States imposed upon its NATO allies a decision to station new medium-range nuclear missiles in some West European countries, which starts a new spiral in the arms race. Much that is constructive can be done in Europe for the benefit of peace particularly in connection with the Madrid meeting and the proposal of the Warsaw Treaty Organisation to hold a conference on military detente and disarmament. The Soviet Union firmly holds that everything positive that has been achieved in Europe by the collective efforts of states, large and small, should be secured and promoted.

Delays in effective military detente are capable not only of increasing the gap between military and political detente (in itself an alarming symptom) but also of creating difficulties in promoting comprehensive, reliable political detente on the broadest scale.

Marxists see detente as a complex, dynamic, developing process intertwined with other global social, economic and political processes. It is hard to isolate detente proper from all those interacting processes, either theoretically or, still less, practically. But it must be done.

Considerable difficulties are introduced into the practices of, and approaches to, detente by *attempts to use it for interference in the internal affairs of countries under the pretext of "defence of human rights"*. Some people even claim a "right" to such interference on the basis of the Helsinki Final Act which, as is known, is not an international legal document. Besides, it says nothing about any so-called "right" to interference. Nor does it contain a word that would substantiate the idea of so-called "common responsibility" of the signatory countries for everything taking place inside those countries, a view current to a greater or lesser extent in the Western scientific, political and, naturally, propaganda press.

It must be reiterated once again that detente covers only relations between states. This is an important social and scientific aspect of the social and scientific concept of detente acceptable to

all states, insofar as it does not challenge their sovereignty. Detente does not imply interference in the internal affairs of states. More, it precludes this as incompatible with detente. Detente cannot be either a tool for "exporting revolution" or a tool for "exporting counter-revolution". At the same time, detente is in no sense a kind of pact freezing "social status quo" between the two systems, insofar as social change is a consequence of the internal development of countries, their internal affair. No artificial preservation of the social status quo in any country is possible.

Of major concern in the context of detente is the highly charged atmosphere in many parts of the globe and the existence of international confrontations resulting, or capable of resulting, in armed conflict. Local as some international conflicts may seem, they cannot fail to reflect negatively on detente, although it doubtlessly imposes certain restraints on their level, course and outcome.

The world cannot sit back and wait until some local conflict flares up strongly enough to become international, increases the confrontation between the great powers and rolls back the whole process of detente. The peaceful political settlement of conflicts while they remain local, prevention of their internationalisation, and halting armed confrontation where it has begun, could reduce international tensions and eliminate conflicts dangerous to states, regions, and the global international situation.

All these difficulties and contradictions of the present stage of detente are a source of alarm and fear to some, and even disappointment to others. It must be said that many of the difficulties and contradictions of detente are purely objective. They must be taken into account and reckoned with. Quite a few of the difficulties and contradictions due to detente are of a subjective nature. But they are surmountable if firmly opposed by the exponents of detente.

The post-Helsinki period has not brought victories to the opponents of detente, their argumentation or anti-detente actions. Detente has proved *so viable, stable and entrenched in the system of international relations, social life and the psychology of peoples, in the internal and external policies of countries belonging to different systems* that it could not be slowed down, weakened, still less, undermined, by the forces opposing the main trend in international development of the 1970s. Detente possesses major reserves, a considerable development potential. It has already become an objective factor itself, a motive force in the present system of international relations.

The post-Helsinki period has once again confirmed, and confirmed uncompromisingly, that there is no reasonable alternative

to detente in present-day international relations. It is noteworthy that in the complex situation of the beginning of 1980 the Soviet Union found it necessary to reaffirm its confidence in the vitality of detente. In his answers to questions put by *Pravda* on January 13, Leonid Brezhnev said that the policy of detente "has deep roots. It is supported by mighty forces and has every chance of remaining the basic tendency in relations between states". Detente is an absolutely necessary and indispensable prerequisite for any constructive approach to the solution of crucial world issues.

DISCUSSIONS

Socio-Philosophical Problems Involved in "Man-Machine" Systems

From the Editors: Today problems of artificial intelligence are widely debated in the most diverse spheres of science and technology. In the Soviet Union they attract the attention not only of engineers and cyberneticians, but of philosophers, linguists, logicians, psychologists, sociologists and economists. In June 1978 they were discussed as an integrated scientific and technical problem at a "round table" of the *Voprosy filosofii* (Problems of Philosophy). We present here an abridged version of the stenographic report of the discussion, prepared by Yuri Senokosov, one of our staff editors.

* * *

G. POSPELOV, Corresponding Member of the USSR Academy of Sciences: The spectacular progress of computer technology, its rapid development particularly over the past 25 years is indicative of the exceptional role computers play in modern society. It is, in my view, similar to the role of the steam engine in the age of the Industrial Revolution, insofar as mathematical machines are, on the one hand, used as a means of automation and, on the other, as a tool for sharply enhancing the efficiency of man's intellectual activity.

When they first appeared, automatic electronic machines computed digital data, and they inherited their name from that initial use. Accordingly, the first programming languages were oriented on mathematical models in physics, mechanics, economics, management, etc. In time the picture began to change; first gradually, then ever more rapidly computers began to process symbols or symbolic data (sometimes inaccurately called symbolic information or digital information).

The ability to process symbols, transform their sequences and ensembles, and perform operations and procedures on them, lies at the root of all types and forms of communicative links in human society. Symbols or signs in audio or visible form, ordered

by syntactic rules, reflect the semantics and pragmatism of human relations, and form natural languages and the many languages of the exact sciences. Suffice it to recall the importance of symbolism and its transformations in mathematics.

In general, it can be said that, starting with our simian ancestors' language of gestures, the development of human civilisation and intelligence has been accompanied by the development of symbolism and means of transforming it. Leaving aside problems of calculation, ever since computers and their programmes acquired the ability to process data in symbolic form it became possible, in my view, to speak of artificial intelligence, i. e., of the ability of computers to solve problems traditionally regarded as intellectual.

This ability led, naturally, to the inclusion of computers in the communication links and relations of people as a kind of "intellectual" tool which, however, generated a number of complex problems for the theory of artificial intelligence. The thing is that any communication between two persons presumes the existence of some community of their models of the external world and a certain, not too sharply divergent level of knowledge of the topic of the conversation. This makes it possible for them to omit whole sentences or even portions of the text from the conversation without the risk of being misunderstood. But what about a computer?

For a computer to be incorporated in the communicative relations of people as a tool for enhancing intellectual activity its memory should contain a semantic model of some substantive domain, notably, if the question is of communication with the help of texts, a "text-meaning-reality" model. Given such a semantic model, a computer can analyse and synthesise texts and speech. But semantic models can be constructed if we learn to represent knowledge in a computer's memory rather than data, as we do today. Thus, representation of knowledge in computers arises as one of the key problems of artificial intelligence. At traditional world conferences on artificial intelligence from 25 to 35 per cent of all papers and reports are invariably devoted to this problem.

We have offered a brief description of the first of the important computer properties that owe their development to the theory of artificial intelligence. The property of computers to analyse and synthesise texts and speech is realised in so-called question-answer systems, or in systems of interaction with data based in a natural language restricted by professional vocabulary.[1]

In essence, the ability of computers to analyse and synthesise texts and speech determines a new usage of computer technology by people who take decisions directly, without the help of intermediary programmers.

The second property determining the new computer usage is, in my view, the computer's ability to solve problems according to their formulation and the initial data, without drawing up a plan or solution algorithm. The problem solution plan and working programme are devised automatically by a scheduler-programme from a set of programmed modules. And since these modules are fragments of the mentioned universal mathematical models, it is hard to overestimate the importance of this computer property, which developed thanks to the headway made by the "artificial intelligence" scientific trend.

It is appropriate to recall one statement by Karl Marx. "A spider conducts operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality. At the end of every labour-process, we get a result that already existed in the imagination of the labourer at its commencement." [2]

When viewing the conventional functioning and utilisation of computer technology from this point of view, we must concede that a computer functions more like a spider or bee, rather than a weaver or architect. Spiders and bees apparently function according to genetic programmes; computers operate according to programmes drawn up by programmers in some language. For a computer to handle problem solution like a human being it must be fed a semantic model, or a model of the substantive domain based on the represented knowledge, and a scheduler-programme that would develop the schedule (algorithm) for solving the problem and the working programme for the computer.

A few words now about semantic models used to codify the semantic essence of processes, phenomena, texts, phrases, etc. Several methods are employed to construct semantic models. One fairly widespread semantic model is the so-called semantic net or graph reflecting the meaning of a text or phrase. Concepts are correlated to the peaks of the net or graph, and the relations between them to the curves. The possibility of constructing a semantic model of some substantive domain is confirmed by the fact that in such languages as Italian, Russian, or English there are no more than 180-200 basic relations: action, motion, state, etc. If we now take some 500 concepts from some domain, which is sufficient, we obtain a net that can be easily processed by modern computers.

In the light of what has been said, it is obvious that computers are a tool for human intellectual activity, while the scientific trend of "artificial intelligence" gives this tool new qualities and assures a new and more promising style of utilisation. Accordingly, in my

view, the argument between the exponents and opponents of artificial intelligence is absolutely meaningless.

As for the question whether a machine can, by itself, think or reason like a man, we can reply that human mental and intellectual activities are initiated by a person's requirements, desires, interests, inquisitiveness, purposes, etc. Similarly (if it is appropriate to speak of any similarity), a computer's "mental" or "intellectual" activity is initiated solely by the will of the person using it. A computer can indeed beat a person at chess, but it derives none of the chess player's satisfaction from the game.

M. BOTVINNIK, D. Sc. (Tech.), International Chess Grand Master: In my opinion, G. Pospelov was not altogether frank in his statements. I want to be quite clear. I think that when we speak of intelligence, natural or artificial, we must rid ourselves of our prejudices. Let us agree to evaluate intelligence from the cybernetic point of view. How can intelligence be gauged from the cybernetic point of view? Intelligence is an ability to make a decision—a good decision—in a complicated situation, with a thrifty expenditure of resources. If we approach the matter from this point of view we find no difference between natural and artificial intelligence.

Why did the idea of artificial intelligence arise at all? Because the volume of information people have to deal with is snowballing catastrophically, and the problems are growing ever more complex. A person may not be able to carry out his decision, and he needs help. Thus, firstly, there is a need for a data-processing device, something analogous to the human brain. Artificial intelligence is computer-based. What determines the abilities of such a device? In a nutshell, it is speed and memory capacity. That being the case, artificial data-processing devices already surpass the human brain.

But a data-processing device is not enough. We also need a programme that would make it possible to use the device to the fullest extent. In this respect the human brain, of course, is greatly superior to any computer. The mathematical formalism of computers is still highly inadequate: in a man it is exceptionally powerful. If we wish to create an artificial intelligence capable of helping human decision-making we must provide computers with the same mathematical formalism as that of the human being or even better.

This task has long since been pursued in two directions. The first assumes that a computer programme should not follow the method employed by man in his programmes. Exponents of the other direction hold that a computer programme should be elaborated on the same basis as in man. We must concede that the

results in both directions are modest indeed. This suggests that the theories on which the work in these directions is based have, perhaps, not been borne out by practice. We are currently working on a programme which, we hope, when completed, will enable the computer to play at the level of chess masters.

D. POSPELOV, D. Sc. (Tech.): As I see it, the main question involved in using computers for simulating intelligence is the question as to what specifically we want to simulate. If, for example, I have written a very good chess programme, of which Botvinnik spoke here, and fed it into a computer, can I say that the machine playing chess according to that programme possesses "artificial intelligence"? I think not. It is simply an "intelligent chess programme". Then I feed into the computer a programme for writing music, say, a programme elaborated by the well-known Soviet scientist R. Zaripov. Now the computer not only plays chess well but can also write passable waltzes and marches. Can it be said to have "artificial intelligence"? I think not. And what if I feed a programme simulating small-talk about the weather?

Obviously, such a path of simulating various aspects of intellectual activity is endless. Furthermore, programmes fed into computers are highly specialised and only suitable for simulating the procedures they were designed for. The main question thus is: what must we simulate? I think there can be only one answer. We must simulate not processes of chess-playing, music writing, or whatever, but global psychological mechanisms that make it possible to *plot* those processes. Alas, psychology so far provides no answer to the question of the structure and functioning of such mechanisms.

This is what determines the attention specialists give to problems of developing systems capable of understanding natural languages and engaging in a dialogue with a person in the language he understands. Natural language is the most efficient system capable of simulating reality we know today.

But the question arises: can we restrict ourselves only to the verbal level in developing artificial intelligence? I think not. Man processes a vast amount of information at the non-verbal level; many processes important for intellectual activity also take place at the non-verbal level. How can they be put into a computer? As yet this is simply impossible. Computer programmes require textual descriptions of processes, if even in imprecise natural language. It is impossible to draw up a programme of something that cannot be expressed in words. Lately some advances have been made in developing analogues of non-verbal mental procedures. The example of simulating a global recognition mechanism based on the so-called perception, although on the whole it has not lived up

to expectations, has nevertheless shown that computers are not the only means of developing artificial intelligence.

Thinking without body is impossible. But a computer has no body, no links with the environment, no sensations. But modern robots equipped with sensors are capable of picking up signals directly from the environment. The performance of their "sense organs" approaches, and in some cases surpasses, that of human organs. This poses the problem of developing a logic of perception and cognition of the surrounding world for robots. The creation of such temporal, spatial, imperative, causal and other logics, the creation of inductive and imprecise rationalisation schemes, is a primary task along the road of building artificial intelligent systems.

And one final remark. The development of a global artificial intelligence is hardly of any practical interest. The practical task is the creation of professionally and problem-oriented intelligent systems for solving specific classes of problems. In my opinion, the methodology of creating such intelligent systems is the core of the theory of artificial intelligence worth discussing and arguing about.

L. KUZIN, D. Sc. (Tech.): The theory of artificial intelligence is, in our view, an applied scientific-technical discipline similar to automatic control theory, which employs models, apparatuses and devices borrowed from different disciplines: psychology, linguistics, information science, discrete mathematics, systems programming, calculus, etc.

The core of all modern artificial intelligence systems is an intelligence data bank of information about the external world. It can be divided arbitrarily into three bases: purpose, knowledge, and data not necessarily autonomously present in the given system. The knowledge base contains information reflecting the laws and regularities existing in the given substantive domain and making it possible to both deduce new facts present in the given state of a problem medium, but not recorded in the data base, and forecast potentially possible states. The purpose base contains information regarding the purposeful behaviour of the problem medium and determines the behaviour of the artificial intelligence system. The data base includes factographic, quantitative data linked by a certain structure information concerning which is stored in the knowledge base.

One feature of artificial intelligence systems stems from the problem of the vagueness or nebulosity of the decision-making process itself. In most cases people making decisions cannot represent the process formally. It is not that they have a vague understanding of what they are doing but rather that the indeterminancy lies in the very nature of decision-making. That is

why new mathematical models and theories were elaborated in the course of artificial intelligence research, notably the algebra and logic of vague sets specifically designed for simulating the uncertainty properties of decision-making processes.

Another direction of solving the problem is the creation of high-capacity data banks and linguistic data-processing models.

Although a data bank, however large, is a finite system, superficially it "behaves" like an infinite system with the properties of vagueness. In this connection it is necessary to bear in mind one very important law of large systems, notably data-processing systems: with an increase in the quantity of information by one order a large system changes its properties radically and quantitatively.

In our view, it is more correct to speak not of autonomous artificial intelligence systems but of a new class of mixed man-machine systems consisting of "human" and machine elements, with a continuous exchange of experience, habits and information between them. Furthermore, this model implicitly presumes third element which it is hard to define as either human or machine; it is mixed. The machine and mixed elements of the system influence the people incorporated in it, stimulating new methods of decision-making. The transfer of knowledge from man to computer and formation of the computer's data base can, as I see it, be effected by elaborating learning and knowledge acquisition models in the given professional domain. Accordingly, artificial intelligence models should be targeted on constant self-development (evolution) already on the drawing board.

A. BRUSHLINSKY, D.Sc. (Psychol.): The efforts of some new cyberneticians to provide a constructive answer to the question, "Can the machine think?", take very different forms, notably attempts to create artificial, that is, machine "intelligence". The scientific critique of the more extreme cybernetic views based on philosophical and psychological proof of the impossibility of machine thought, which began in the Soviet Union in the latter 50s and early 60s, extends to all such attempts. Already then this profound and justified criticism appeared in well-known works of S. Rubinstein, E. Ilyenkov, M. Rozental and others. This analysis of natural and artificial "intelligence" can in our view be continued in the following way.

Technology (for example, artificial "intelligence") and psychics (for example, thought) are based on substantially different *types of interrelations* between their components. Any machine is built by man as an entity compounded of *clearly defined* parts, units, blocks, etc. Their original separateness determines not only the structure, the "morphology", of the machine but also its functioning, its

"physiology". Similar relations of separateness between elements of the whole are characteristic of a mathematical set which, in the view of N. Burbaki and many other specialists, is basic and initial in mathematics. Let us call these relations *disjunctive* (we borrow the term from M. Reuchlin and S. Rubinstein). It is obvious that not only technology, but mathematics as well, is disjunctive; the latter idealises the afore-mentioned type of interconnections between elements materialised in the former. This is true of both discrete and continuous mathematics (which was amply demonstrated in the well-known mathematical works of L. Zadeh, P. Rashevsky and others).

The *mental as a process* belongs to a fundamentally different type of system. For example, thinking, as a real, living process, is, by virtue of its initial non-additive nature, never objectively disjunctive in the afore-mentioned sense. This non-disjunctive type of relationships between the components of the mental as a process is ever more extensively revealed in the course of special experiments, conducted by our group in studying the psychology of thinking at the USSR Academy of Sciences' Institute of Psychology.

The disjunctive type of interconnections is most fully summarised in formal (notably mathematical) logic, which at a certain level of abstraction is most fruitful and promising, even though it neglects the development of the entity under study. Non-disjunctive interconnections are summarised on the basis of dialectical logic, which provides the main methodological prerequisites for studying this or that object in its genesis. The psychology of thinking based on dialectical logic sets itself the task of systematically studying the micro- and macro-development of living, real mental processes in the course of the continuous formation and mutual transmutation of all its stages, components, operations, etc. Hence, the highest level of such continuity in the formation of the conscious and subconscious thinking process of the individual is non-disjunctive, that is, *genetically continuous.* It is clear from what has been said that the psychological concept of continuity differs substantially from the mathematical (disjunctive).

In my view, this interpretation of the disjunctive and non-disjunctive solves the question of machine "thinking" in general, and artificial intelligence in particular. It is in principle impossible to build an artificial machine "intelligence", since it is by definition disjunctive, while thinking as a living process is always non-disjunctive. Any existing or future machine (including computers) can only be an artificial entity, that is, secondary or derivative with respect to man and his activity. A machine is built by man, and only man. Therefore a machine will never be disjunctive, hence there will never be artificial "intelligence".

Nevertheless, the domain of research erroneously called the development of artificial "intelligence" is necessary and fruitful, because existing and future machines are necessary tools of the creative, and non-creative, activity of people. Man was, is and will continue to be the true and only subject of thinking.

V. TYUKHTIN, D. Sc. (Philos.): Many of the theoretical miscalculations and flaws in studies of this problem seem to be due to two methodological extremes: pessimism, when the specifics of natural intelligence is absolutised and the possibilities and prospects of artificial intelligence are underestimated; and "superoptimism" bred by the initial achievements in employing cybernetic devices for solving sufficiently simple problems (with a "good structure") that provided the basis for exaggerating the role of the machine factor and underestimating the human factor in solving complex and creative problems. This resulted in the hypostatising of individual formal methods without taking into account the difficulties of modelling natural intelligence.

Correct posing and investigation of the problem of artificial intelligence depends upon the interpretation of natural intelligence. The constructive approach to thinking, which can be found in the works of I. Sechenov and I. Pavlov, is that thought, in the broad sense, is treated as problem *solution* (from elementary behavioural to complex theoretical problems). It follows that animals, people and man-machine complexes are systems capable of solving problems, or, simpler, resolving systems. Problems can be of two types: *reproductive,* when the conditions, means and methods of problem solution at the disposal of the resolving system are sufficient for achieving an objective; and *creative,* or productive, problems, when the conditions, means and methods (algorithms) in the system's experience are insufficient for solving the problem and the missing links must be found by the resolving system in interaction with the environment and on the basis of past experience.

All real problems arising in problem situations contain reproductive and creative elements of thought. Classification of problems according to the two types depends upon the predominance of reproductive or creative elements. Hence, as I see it, by natural intelligence is meant the ability of living systems (animals and man) to solve problems including reproductive and creative elements. Correspondingly, artificial intelligence should then be defined as machine simulation of the solution of reproductive and creative problems. But with such a definition we leave aside the question of the fundamental possibility of using machines for solving creative problems, as well as the question of the

equivalence (in significant features) of natural and artificial intelligence according to the properties of their substrata.

Why is it impossible to formalise creative elements? These elements cannot be reproduced by purely functional modelling, without realising the properties and structure of the bearer of natural intelligence—man and his brain.

In my view, the basic aspects and research levels of human intelligence are: 1) the information-logical, that is, the level of logical-syntactic structures of data processing; 2) the epistemological level, which reveals the connection between content and the logical forms of data processing, the laws of interaction of the cognising subject with the object; 3) the psychological level and aspect of studies of intelligence, concentrating on the specific features, state and experience of the individual; 4) the neuropsychic level, which reveals the physiological mechanisms of mental activity; 5) the neuro-physiological aspect (physiology of the brain, receptors and nerve routes); 6) the level of biochemical processes. Hence, the question of entrusting various functions of natural intelligence to data-processing machines and robots presumes recourse to the aggregate of sciences of life, mental activity, and man.

Apparently, the most feasible and effective direction of research is towards creating hybrid man-machine systems in which man's duty is to exercise the creative components of thought, while the computer's function is to realise any machine programmes, insofar as the computer possesses algorithmic universality.

I feel that the basic strategy of cybernetic research in the coming decades should be integrated studies of "man-machine" intelligence, that is, human intelligence reinforced by data-processing hardware.

M. GAAZE-RAPOPORT, Cand. Sc. (Tech.): In undertaking a philosophical-methodological analysis of the problem of artificial intelligence it is, in my view, necessary to take into account the following important proposition. In the process of historical development, man, as a species and part of material nature, continuously acts upon nature and changes both the environment and himself in the process of adapting to the environment he has changed. The extent and force of such change, which is associated with cognition and mastery of the forces and properties of nature, can be graphically explained with the help of the following example. If one imagined mankind suddenly denied the possibility of utilising its acquired knowledge of electric energy its very existence would probably be jeopardised. On the other hand, the possibilities of man's acting upon nature are so great that unreasonable use of them could lead to man's extinction.

Hence the need to forecast the possible results of scientific research. This fully holds for the problem of artificial intelligence. That is why a priori assertions, based in part on the present level of knowledge, regarding the fundamental impossibility of "real artificial intelligence", assertions regarding the supposedly insuperable barrier between natural and artificial intelligence are, at present as well as in the foreseeable future, harmful. They breed psychological confidence in the usefulness and fundamental harmlessness of artificial intelligence, whatever its development, and thereby blunt the sense of necessary caution so important in scientific research.

The experience gained in employing computer technology for solving ever more complex "intellectual" problems until recently considered the prerogative of man shows that all previous objections of the opponents of a positive answer to the question have not been sufficiently valid. Thus, objections to the effect that existing machines operate with codes (numbers) and cannot accept semantic information are no longer pertinent. The development of semiotic models (situation control) confirms the possibility of a machine's accepting and processing semantic information.

Objections to the effect that, unlike living (biological) entities, machines have no requirements or emotions were debated at the 4th International Conference on Artificial Intelligence in Tbilisi. The fundamental possibility of providing machines with such apparently purely biological properties were noted. Objections at that meeting by Brushlinsky, who claimed that human thought is non-disjunctive, whereas machines are basically disjunctive, do not appear sufficiently well-founded to me. Taken as an isolated individual, man, by virtue of his temporal and spatial finiteness, does not possess absolute non-disjunction; computers, taking into account the possibility of introducing elements of chance and uncertainty, are, in turn, not absolutely disjunctive.

The main methodological shortcoming of current work is obviously an inadequate psychological base, inadequate interpretation of obtained and possible results.

B. BIRYUKOV, D. Sc. (Philos.): Initially the question of the possibility of artificial intelligence was raised by the pioneers of cybernetics, notably, by A. Turing in his well-known work, "Can the Machine Think?" The paper and subsequent discussions revealed the vagueness of the question. A precise formulation of the problem is, in my view, difficult because the functioning of the brain and thought, on the one hand, and modern data-processing systems, on the other, are described in scientific languages that have little in common. That is why the question, Can the machine

think? which once drew such great attention, has in effect been removed from the "agenda" of science.

The question of the possibilities of "artificial intelligence" is another matter. It has been adequately studied. The thing is that over the last decades the limitations due to *complexity* have become patently clear. It was found that the abstraction of potential implementation, which ignores the limitations of human activity in space, time and materials; the abstraction of identification, which assumes that the studied entities can always be distinguished and identified; the abstraction of infallibility, which postulates that data-processing is error-proof; and the constructive object idealisation which creates a "strong" world of "cruel" entities—all of which is inherent in the principle of "fundamental possibility"—this mathematical-logical ideal collapses completely when science is faced with practical tasks.

It is worth recalling some of the views expressed at the dawn of cybernetics by another of its pioneers, John von Neumann, which we have not yet sufficiently grasped in philosophical terms. Von Neumann's approach is to compare an object with its description from the point of view of complexity. The scientific ideal, as we know, is to make the complex simple and knowable; abstractions and idealisations are means of simplification. To understand a complex thing is to make it simple, more comprehensible, and in a sense more visual. Any comparatively simple process, object or system can always be described in even simpler terms. Virtually all natural sciences, and especially the mathematical sciences, have flourished on this property of cognitive processes. Von Neumann's basic postulate is that there exists a limit of complexity of systems, beyond which it is impossible for any description of the system to be in some natural sense simpler than the system itself. Von Neumann illustrated this postulate by the example of the visual analyser, as well as in stricter terms of automata theory, saying that beyond some threshold of complexity it may prove impossible to build an automatic system simpler than the one it is designed to simulate.

The difficulties encountered in recent years in the development of programming and computer-solution systems for complex problems apparently reflect to some extent an approximation to von Neumann's "complexity threshold".

Knowledge of our intellectual processes is still meagre. There are different levels of intelligence in the functioning of the human brain. Some are easily simulated with the help of modern cybernetic means, others are more difficult to model, while yet others, as I see it, will probably never be more or less fully formalised. I feel that there are spheres of human consciousness and self-cognition which, in the foreseeable future, will remain

beyond the reach of cybernetic modelling or automation of intellectual processes.

We can, of course, discuss "bringing up" machines in a "social milieu", as Turing wrote, or building "machines" of biological components, etc. But this is an entirely different matter lying today closer to the realm of science-fiction and discussed in Stanislaw Lem's well-known book *The Sum of Technology*. The key problem today is that of creating "man-machine" systems, and here I can only repeat the words of our Academician A. Berg that machines, as we understand them today, do not "think" (and will hardly ever "think") like man as an intelligent creature, living in a community, and employing natural languages for exchanging thoughts with other intelligent creatures. But it is also obvious that a person equipped with cybernetic boosters of his intelligence thinks better and differently than one forced to stick to primitive means of mechanising his mental labour.

V. ZVEGINTSEV, D. Sc. (Philol.): I am a linguist and will, naturally, discuss the problem of "artificial intelligence" mainly from the linguistic point of view. But first several general considerations.

It was already mentioned here that the very designation of the field of research as "artificial intelligence" (which has in the United States already evolved into a discipline) is of an arbitrary, metaphorical nature. True, sometimes (and fairly frequently) this designation is understood in the literal sense, as the task of creating a system most fully simulating the possibilities of the human intellect, and most frequently it is precisely such a literal understanding that is the point of departure for sundry speculative constructions.

Actually, we are engaged not in simulating human intelligence but in building machines capable of performing certain jobs that have always been regarded as the prerogative of human intelligence: intelligent machines. From this point of view the most unsophisticated computer can be called an intelligent machine and, if you like, declared a system in the "artificial intelligence" class. Indeed, it performs mental work, and better than man. Proceeding from these premises, the task is to build as many types of work performed by the human brain into a machine as possible. But it takes a man to achieve the "resolution capacity" of man.

Since intelligent machines must perform intelligent work, or "think", we must have sufficiently strict definitions, not only of the concept, "intelligence", but of many other concepts associated with mental processes: understanding, knowledge, motivation, purpose, imagination, intuition, learning, etc. Unfortunately, we have no strict definitions of any of these categories, just as we

have none of intelligence itself. It is by now obvious that any creative and productive development of our problem is simply impossible without defining the mentioned categories. That is why American scientists have taken to the road of setting up teams of representatives of different sciences capable of contributing to the solution of this problem: philosophers, logicians, psychologists, linguists, experts in computer mathematics. Representatives of the respective sciences are brought together in the framework of the newly forming "cognitive science" (which I have suggested calling "cogitology"[3]), the purpose of which is not to lump together data provided by these sciences but to develop new tools of cognition which none of them can provide individually.

In this connection, I would like to make a few remarks provoked, in part, by statements made at this meeting. I make bold to do so not because I consider myself an expert in this field, but because I think it is frivolous to try to develop artificial intelligence systems while playing hide-and-seek with the basic concept of this whole field of research—thought.

I feel that understanding of the problem of artificial intelligence is still influenced by the inertia of its evolution. It has become accepted to measure intelligence, or thought, with the yardstick of logic. Hence, it is assumed that, if a machine is capable of logical operations, it is already an embodiment of human intelligence. But the characteristics of human intelligence, of human thought, cannot be reduced to logical or operational actions, nor can its technical aspects be generalised. Proceeding from this logic, incidentally, it could be concluded that by definition nothing a machine can do can relate to human intelligence. Human intelligence begins where machines end. Man's greatest strength lies, perhaps, in his ability to reason illogically and make decisions going beyond all logical rules of thinking. Finally, and most important, no logic is capable of creating new knowledge; logic explicates it but is by its very essence tautological. Similarly, it is hardly right to see thought as a function of the brain alone.

It should be remembered that whatever the form of "machine language", however it is formalised, reduced or arranged, it is always and inevitably a derivative of natural language. Under no circumstances can we evade the need to know the "rules of the game" of natural language.

Many researchers working in this sphere and realising the importance of linguistic data are primarily concerned with language and its units as bearers of "meanings". "Creation" of language meanings is an act of cognition. Insofar as this is the case, such "creation", performed by the brain, relies on data supplied to man by his sensors. If they were not what they are, the meanings of words of natural languages would also be different.

But that is not all. It is essential to know and take into account that behind every linguistic unit lies that language's whole system, and it is indeed a unit only insofar as it is part of the system. The units of a language cannot exist outside its system—that, at least, is the case with natural languages which, whether we will or not, is inevitably our point of departure. But that is not all. A language is not an arithmetical aggregate of words. Language in effect begins with sentences. That is why nowadays the designers of "artificial intelligence" prefer to deal with sentences or even texts.

All that I, of necessity, could only mention briefly gives ground to assert that what we need is an integrated theory within the framework of "cognitive science" (cogitology), powerful enough to deal with the necessarily diversified components mentioned before. The purpose of all partial problems should be the study of these components in the context of the theory of "artificial intelligence". There are many such problems, but science, as we know, begins with problems and ends with problems.

E. POPOV, Cand. Sc. (Tech.): There is not a single branch of the economy in the Soviet Union which does not employ computer technology. However universal, its mass utilisation is prevented by the fact that it takes a programmer to handle communication with a computer. This indicates the obvious need for solving the problem of communication between man and computers not only through increasing the numbers of programmers, but also by developing communication in a natural language, which possesses a number of advantages over formalised programming languages.

In our view, the elaboration of systems employing a natural language in communication with computers (natural language system—NLS) should be based on the principles of universality, development, and inter-disciplinary penetration. By universality we mean: a) universality in the choice of means of representing knowledge (data supply), making it possible to expand the class of represented phenomena in the development of a system without changing processing methods; b) universality of algorithms and programmes (mathematical formalism), which provides opportunities for expanding a system's function through adjustment of mathematical formalism rather than its reconstruction; c) independence of mathematical formalism and data supply, which makes it possible to expand and modify models of the surrounding world without changing programme aids.

The development principle assumes that the elaboration of natural language systems is one of several stages in view of the impossibility of fully solving the problem at the present time. Such systems should be based on module assembly in which the calling

order, as well as the number and functions of modules can be varied without changing the whole system.

The principle of inter-disciplinary penetration presumes the need for specialists in different fields—linguists and programmers in the first place—to communicate and be in constant contact to resolve the problem.

I would also like to dwell briefly on the state and prospects of development of our POET system. The choice of this system was not fortuitous. I know of no other operating system which could with full justification be referred to as a natural language system. This, of course, does not mean that all problems of communication have been resolved in the POET system; however, it is being elaborated in strict accordance with the principles listed above, which makes it possible for it to evolve, constantly increasing its possibilities.

At the first stage the following restrictions were introduced: the language of communication is Russian business economic prose; communication is effected by means of separate, unconnected, simple interrogative sentences containing no turns of speech, ellipses or anaphoric references; internal representation is possible only of a static (rather than dynamic) world without cause-and-effect links between events; the data base is of rigid, fixed format restricting the topics of communication; if the system fails to comprehend a question it cannot direct the user into a paraphrase process.

At the second stage, the communication process is characterised by the following features: communication is effected as a dialogue involving several related sentences containing turns of speech, subordinate clauses, ellipses and anaphoric references; if the system does not comprehend the question (due to an error of the user, ambiguity of the request, or the limit possibilities of the system), it informs the user of the causes of the failure in concept-terms and directs him (by means of questions and assertions) to change the initial request; internal representation permits the expression of cause-and-effect links between events.

The third stage envisages the inclusion of a vocal input and output in the system. Furthermore, the system's deductive possibilities will be substantially increased.

Yu. APRESYAN, Cand. Sc. (Philol.): To understand the range of possibilities of artificial intelligence it is, in my view, useful to formulate the key properties of natural intelligence. In any case they include: 1) the ability to understand and formulate any texts in a natural language, 2) the ability to cognise the laws of the external world, 3) the ability to take decisions.

If we take the question-and-answer system as a typical example

of artificial intelligence (and no other serious, and not toy systems have been produced either here or abroad) we must concede that it possesses only the first of these qualities, the ability to understand and formulate texts, and even that to a limited extent.

Indeed, a man's understanding of texts is based on three elements: knowledge of the language, knowledge of logic, and knowledge of reality.

Knowledge of a certain natural language manifests itself, among other things, in that a person knowing that language is able to establish the synonymic quality of superficially different sentences, and the omonymic quality of superficially identical sentences. This refers not only to vocabulary, but to all grammatical, and many phonetic, language means. However, although the man in the street has no apparent difficulty employing all these language means in practice, their full formal description is an enormous, complex theoretical task, which has only recently arisen in linguistics and is still very far from being accomplished.

The same must be said of the two other types of knowledge essential for an understanding of texts: knowledge of logic and knowledge of reality.

Thus, as of today artificial intelligence is a system only remotely resembling natural intelligence. It communicates with man in an extremely restricted, highly simplified and standardised natural language, possesses very modest logical possibilities as compared with man, and has a very meagre store of information about reality.

The limited nature of modern artificial intelligence systems is also due to the fact that they do not permit any substantial expansion. Any attempt to enrich their linguistic, logical or informational supply by basically new means requires new systems, not improvement of the old ones.

The difficulties to be overcome along this road are very great, the main one lying apparently in elaborating formal language models. The thing is that linguists have to do more than just translate knowledge accumulated in science into a formal language; they must acquire most of that knowledge, especially in the sphere of semantics. This is not simple. If it is true that language is living thinking, then we are now faced with the most difficult situation conceivable in science, a situation in which the object of cognition coincides with its subject. In the coming years and decades this fact may elevate linguistics to the status of science No. 1.

A. URSUL, D. Sc. (Philos.): As I see it, today there is not enough information on the problem of artificial intelligence for any constructive solution. Not for nothing have the prestigious scientists who spoke here declared that the question whether it can

be created at all is to some degree indefinite. In my view, the grounds for an optimistic or pessimistic point of view appear when a shortage of information is compensated by the inclusion of certain evaluation mechanisms. For example, when the machine factor is absolutised to the detriment of the human factor, or vice versa, which leads to an exaggeration of the role of man or machine. It is necessary to proceed from the unity of their relationship, which must be made optimal: man and machine are elements of a "man-machine" system. The interaction of these components in an integral system gives rise to new characteristics not basically inherent in either one taken separately. Thus, as I see it, the problem of harmonising the interaction of man and machine in the data aspect is the chief problem with which cyberneticians and other scientists dealing with artificial intelligence are currently concerned.

Of great importance in this connection is the proposition voiced here by cyberneticians that an artificial intelligence system invariably operates in close contact with man, and it is very difficult to determine who has contributed more to the solution, the man or the machine.

Hence, it is not the metaphysical separation of man (thinking) from the machine, nor their identification, nor even putting the machine to the fore, that can help determine the right place of artificial intelligence in scientific, technological and social progress, but investigation of their actual interaction, which must be optimised and the objective of which is man, his fuller and more comprehensive development. This investigation makes it possible to determine the specific social functions of artificial intelligence embodied in hardware.

Since artificial intelligence systems are developed to aid man, it seems reasonable to call the concept "anthropocybernetic" (socio-cybernetic), with the accent on man interacting with cybernetic hardware. This term may seem not very fortunate; however, it clearly indicates rejection of abstract "anthropologism" and cybernetic "technicism" as philosophical extremes. Proceeding from the concept of "socio-cybernetics", we can demonstrate the general scientific nature of the problem of artificial intelligence. In particular, it follows that it is impossible to offer a purely cybernetic, purely psychological, or even purely philosophical, proof of the possibility (impossibility) of building it. In other words, the fundamental premises of the problem of artificial intelligence cannot be resolved from the positions of any single scientific discipline.

N. ALEXEYEV, Cand. Sc. (Psychol.), B. YUDIN, Cand. Sc. (Philos.): The appearance of computers can be likened to the

invention of printing. If we recall that many consequences of Gutenberg's invention fully revealed themselves decades, if not centuries, later, we must agree that today it is impossible to foresee many of the consequences of computers. For that reason we can discuss more or less seriously only those consequences that are clearly manifest.

At the same time, the significance of the fact of the appearance of such machines was quickly realised and digested by social consciousness over a fairly broad spectrum, from philosophical and theoretical-scientific analysis to science-fiction and the mythology of daily experience. Despite the difference between the methods of such realisation, they shared in common the general acceptance of the new technology invading life and work.

The initial stage in the development of the problem of artificial intelligence was associated in content, with mastering the new means of activity, and, in form, with comparison with human actions in solving similar problems. It appears that this stage has been concluded, in essence if not in fact, having performed its function and exhausted its ideological potential. The new means has been mastered technologically, and ideas of its possibilities and limitations, usages, and so on, are formed accordingly. The aura of mystery has vanished and been replaced by exact knowledge of its present characteristics and approximate knowledge of possible future ones.

In proceeding to the second stage of development of the problem of the socio-technological and socio-cultural consequences of computerisation, it is worth recalling that such comprehensive and diversified means as computers affect the whole structure and organisation of human activity, involving not only neighbouring but occasionally more remote sphere. Initially, however, new means are as a rule examined and evaluated within the framework of conventional structures of activity, from the point of view of actualised objectives and tasks. In other words, the range of possibilities of these means is determined by simple extrapolation; this is reflected in the notion of computers, current five or ten years ago, as intelligence boosters.

But sooner or later the revolutionary nature of the new means of activity becomes apparent; they give rise to problems the very formulation of which was formerly beyond the imagination. For example, it was found that sophisticated efforts to develop analog of managerial behaviour reflecting its interconnections and regularities, made possible by computerisation, do not require a computer. For many problems, it appears, the volume of processed data is less important than a conscious attitude towards the principles of its selection and organisation. Thus, action

structures which initially developed thanks to computerisation possess independent meaning and value.

No less important is another consideration. A person making a decision invariably makes resort to some mental analog of the situation. It includes, in syncretic form, certain characteristics of the situation as well as elements deriving from one's past experiences and current state. But when the same model is represented in explicit and systematised form, as required by systems analysis, there appear opportunities for collective work, for its clarification, supplementation and verification by specialists in various branches of knowledge. Thus, computers give rise not only to new methods of mental activity, but also to new forms of its organisation, to new forms of joint activity. An apparently paradoxical thing appears: a machine, a computer, initiates methodological work, which is most creative in modern scientific activity. The researcher is literally forced to view his professional activity from outside and place it in the context of other activities. Today it is not his narrow professional sphere but a "scan" over that broader context that determines the style and character of his thinking and outcome of his work.

To sum up. The second stage of development of the problem of artificial intelligence consists in technological reconstruction of previously formed activity. Computerisation leads to new divisions of labour in the most diverse spheres of human activity, to the appearance of new specific functions of methodologist, organiser, etc. This changes forms of thinking, scientific thinking, in particular. As we see it, the socio-cultural and socio-technical aspects of computerisation of human activity should not only be studied and forecast but also designed, constructed, and the most diverse possible variants correlated and compared from the most general philosophical positions. In this we see the philosophical meaning of the problem today.

NOTES

[1] One of the first Soviet question-answer systems, elaborated by E. Popov, is described in an article by V. Baklanov and E. Popov, published in the journal *Izvestia AN SSSR. Tekhnicheskaya kibernetika*, No. 4, 1978.

[2] K. Marx, *Capital*, Moscow, Vol. 1, 1969, p. 174.

[3] *Voprosy filosofii*, No. 4, 1977, p. 90.

CRITICAL STUDIES AND COMMENT

On Some Pronouncements of the "New Philosophers"

YURI KAGRAMANOV

> Thinker, tell us something good!
> The crowd wants something joyful.
> Can't help it—it's after-dinner time.
>
> *Velemir Khlebnikov*

For more than three years now the Western mass media have been concerned with the "new philosophers". They are quoted, and interviewed, their books get long press reviews, prominent scholars feel obliged to formulate their attitude to them.

What is new about these "new philosophers"? Strange as it may seem, their newness, to my mind, lies in the fact that they are philosophers, that is, they call themselves philosophers and not by some other appelation. Not so very long ago, in the 1960s, it was fashionable in France and other countries to speak of the "demise of philosophy". For bourgeois philosophical thought was powerless in the face of the new, "excessive" and enigmatic reality and was giving way to structuralism in various fields. In fact, structuralism had superseded philosophy, the critics wrote, and had cultivated a taste for applied scientific research, systematic and typological descriptions. The "new philosophers" (the oldest is about 40), were nurtured, so to say, on structuralism, and their demonstrative "return" to philosophy is in itself eloquent: there is no dispensing with philosophy; nothing can replace philosophy in forming an integral picture of the world and man's place in it.

Very few details can be added to the general definition of the term "new philosophers". For they are not a school or a trend; the name connotes only that they are united by certain generational features, old university ties, including (but only as a component) common academic experience gained in the university. All of them

are "children of the year '68". They had a direct part in the "campus revolution" of May 1968 or were influenced by it in one way or another. Those were extraordinary days. The explosive revolt, with its carnival undertones, bloodshed, fantastic slogans and, more important, the heady confidence that everything could be changed at will, radically and immediately.

Then came what is probably best described as the sobering decade. The "new philosophers'" attitude to their revolutionary infatuations of a decade ago differs: there is sobering reassessment, stubbornness, disenchantment, floundering from one extreme to another. But whatever the attitude, '68 was for all of them a milestone, the year in which they were tempered. For it dealt a blow at structuralism, that is, at the cult of impassive, positive research, and instilled in the new generation of humanists interest in the mother of sciences.

In the West, the "new philosophers" are in the limelight partly because of the continued anxiety over the future of the youth revolt. They are seen as representing a new generation who ten years ago so clamorously served notice of its dissent and, judging by all the signs, has not psychologically fully returned to the fold. And since the epicentre of the troubles was (for Western Europe) university Paris, it is only natural that new flare-ups are expected precisely from that quarter.

Let it be said from the very start: the "new philosophers" have not produced a new philosophy. But their appearance on the scene is interesting if only because their behaviour on matters of philosophy, their mode of philosophising, are characteristic, I think, of the present state of bourgeois culture as a whole.

Les nouvelles littéraires, the Paris weekly, was one of the first to publish a review of what they had to say. It described them as a "wave that has swept the surface of the empty wilderness of tradition".[1] The latter is the philosophical tradition, to which the "new philosophers'" attitude is highly complicated. They accept as an indisputable fact that classical bourgeois philosophy is now an anachronism, and by and large that is true. In bourgeois philosophy, existentialism has accomplished a big, but purely negative, task by demonstrating that concrete experience and feelings no longer fit into the classical forms of thought (the limitations of which were first overcome by Marx),[2] and seek new means of expression. In the 20th century, this discovery found its way into literature and art, where it has bred indifference to philosophy, both old and new. Artistic thought and scientific philosophical thought, once distinguished for their harmony, are now far removed from each other. The Western artist of today—and for that matter also the Western scientist—are inclined to formulate their own, so to say "working" philosophy—a temporary home erected without professional assistance. The

majestic edifice of classical bourgeois philosophy, with its intricate rational planning, with its antimonies and counterforces of the laws of logic—that edifice towers somewhere in the distance, a monument to the past rather than a shrine of the present.

To say that this philosophical Valhalla (in terms of its impressiveness) is barren of all life, would be wrong: for philosophical activity (diverse versions of Christian philosophy, traditional positivism, etc.) continue to thrive in some of its parts. More, it is precisely here that the theoretical foundations are laid for most of the official and semi-official Western ideologies. However, the mainstream of philosophy has long since bypassed this edifice. For the "new philosophers" it is no more than a museum, but one in which they show a keen interest. In examining the ornate symbols of the past, the blue domes, the spirits of past geniuses and goddesses, garlands, the rose-coloured clouds, they look down on the ground wondering what all this rested on. It was here that the philosophers (Voltaire, Grimm and others) lunched—but what did they sit on? They must have sat on something, for they did not fall through the floor. The "new philosopher" does not feel the same stability in the present social structure, and hence his heightened interest in the basics, prerequisites and foundations of classical philosophy and, in a more general sense, in the whole of the old culture.

That interest is fully understandable but for the "new philosophers" it is conditioned by their specific attitude to the traditions of bourgeois classical philosophy. And that attitude, I think, rests on the feeling of a tie, albeit a tenuous one, with this tradition and, at the same time, a feeling of alienation from it. This should not be seen as a desire to go beyond its limitations, but rather as non-acceptance of it as a system, with all its values (in this respect the "new philosophers" have probably gone much further than post-classical bourgeois philosophy operating, as it were, on the margin of the classical tradition). The "new philosopher" is constantly haunted by the Maître-penseur (*Maîtres-penseurs* is the title of a book by the new philosopher André Glucksmann), a sort of composite image of the 17th-19th centuries thinker. And the "new philosopher" is in constant dialogue with him: asks him questions, expresses his surprise, sometimes is angry with him, resorts to childish mockery, even puts his tongue out. But perhaps the most profound, and at the same time most elementary level of relations with the Maître is envy, for the Maître-penseur, the maître of words and their meaning, was able to explain the world, translate its multiformity into all-embracing, clear-cut constructs of the mind that had or laid claim to universal applicability.

All that is denied the "new philosopher". History has not endowed him with that happy ability. Nor has it infused in him the

confidence needed to grapple with a much more complex reality and find answers to a multitude of new questions.

The "new philosophers'" attitude to the classical traditions is further complicated by their inclination to hold it responsible for the formal rationality that has now become the mode of functioning of the state-monopoly machinery. The situation is presented as follows: classical philosophy is ossified, petrified in the structures of knowledge, runs through the entire machinery at all its levels and is therefore responsible for all its actions, including criminal ones. And on this score the Maître has to listen to some harsh things. Glucksmann criticises him of showing scant respect for history, which he treats as a clean blackboard on which words of reason can be written.[3] On the one hand, the Maître is accused of having usurped immense power and of interfering in the progress of history, even changing its course. On the other hand, however, he is accused of sheer impotence, for his interference in the final analysis produced results opposite to those he desired. It should not be difficult to see that the ability of the Maître (to the extent that such a composite classical philosopher can be the object of assessment) in influencing the course of history is, at one and the same time, judged too high and too low.

The external connecting link between the scientific-philosophical tradition and the state-monopoly machinery is the university, which has been the target of much disparaging criticism from the New Left ever since 1968. Indeed, the university has become part of the semi-official "science industry", but whatever its faults it remains the basic depository of knowledge, the shrine of science, in which thought is passed on from one generation to another. The "new philosophers", however, see the university as an archaic institution. Some simply bypass it, others remain under its roof but hasten to state that they do not seriously regard the professional standards imposed on them. The role of philosophical mentor, who communicates his knowledge in the form of a monologue *ex cathedra* is either not to the liking of the "new philosopher", or is simply beyond his ability.

Sometimes the role proves too hard, sometimes the play proves too old. Jean Baudrillard, one of the "new philosophers" who have remained at their Alma Mater, maintains that there is a new mechanism for producing ideas, fundamentally different from the traditional one. According to him, there is a kind of infra-communication: ideas gradually crystallise from below; sometimes a book is engraved on people's minds half a year before its publication.[4] The philosopher, therefore, takes on the function of a recorder. According to Glucksmann, nothing can be expected of university science with its "learned jargon". Himself, he has no contacts with the university. He shuns intellectual company,

preferring, he says, the people one meets on suburban trains (meaning, perhaps an accidental and vague social and cultural phenomenon), especially marginal people leading a "peripheral existence"—all manner of vagrants and semi-vagrants, hippies, etc. The desire to go beyond the framework of professionalism is more or less typical of all the "new philosophers". Their ideal, the one they usually choose, is the exotic nomad thinker, the wandering wise man akin to the guru.

The "new philosopher" likes to think of himself as a recalcitrant thinker, wandering in the clouds among the distorted outlines of what was once a clear world. "We," Baudrillard says, "are immersed in a reality that has no comparison, on the surface of which there drift theories no longer bound by categories but are related to each other" [5] (i.e., theories that have no relation to the process of life). The fallacy of bourgeois philosophical theories—their tenuous relation to reality—is thus ascribed to all theories as such. Claiming to be the pulse of our times, the "new philosopher" sometimes dons a tragic mask. One example is Michel Guérin who bewails the misfortune of our era, bereft of form and shape and caught in ambiguity by which, in the end, it will be overtaken.[6] Preceded by this "buoyant" prologue, his appeal to compose an "experimental philosophy" is hardly likely to win support.

Claude Lévi-Strauss has aptly defined the "new philosophers'" philosophy: in most cases, he says, they reveal an "inclination to retreat from scientific thought, a hopeless determination to think up a limited domain of their own within which the philosopher remains master of the situation, the bearer and conduit of truths formulated and certified by himself".[7] The philosopher needs not go beyond this private domain, but should he undertake a positive task, he will try to build himself a *terra firma* (an island in a sea of chaos) with materials borrowed from the bounteous stores of ancient and new philosophy, also from some structuralist ideas and ethical concepts concocted for the purpose.

In the final analysis it is these ethical conceptions that serve as the framework of the new philosophy. Baudrillard and Dollé, for instance, call themselves moralists and acknowledge their preference for the moralists of the "good old times" (particularly Chamfort and Shaftesbury of the 18th century). But they also draw on non-moralist philosophers of the past for the ethical concepts prominent in all their doctrines. Maurice Clavel, an older generation poet and prose writer closely associated with the "new philosophers", recently published a book about Socrates whom he contrasted to Plato. Plato, in his view, is the second key figure of Western philosophy. Socrates, as we know him through Plato, was a moralist of the purest water, Clavel writes. Plato set philosophy on a false course in an attempt to find the "ontological guarantee" of the moral credo shared with

Socrates. In other words, he sought to prove that the objective order of things is the guarantee of the validity of a given moral credo. Socrates was a "witness", Plato became a "doctrinaire". There is no need to dwell on the validity or otherwise of this judgement. What interests us is the conclusion Clavel draws from antiquity. And this roughly is the conclusion: Clavel prefers being a "witness", that is, standing aside and passing judgement on what is good and what is evil without taking the trouble to provide a general substantiation for his moral judgements.

Jean-Paul Dollé, one of the more prominent "new philosophers", believes that the good comes when the world is clear, history properly understood and thoughts are capable of being expressed in speech. Evil, on the other hand, is chaos, barbarity, a blind force incapable of thinking and articulating. The confrontation of these two invariably ends with the triumph of evil. The barbarian is the "eternal conqueror". According to Dollé, barbarity does not necessarily come from the jungle and is not necessarily clothed in the skin of wild animals. The present technocratic state is but a blind, barbaric force, oversaturated with the "technology of knowledge"; it abhors thought and rejects metaphysical questions. It would be a pesky business to distinguish in this conception which we believe is essentially enlightenment turned inside out—between what is true and what is false, for it is constructed on a highly abstract level.

Indeed, extreme abstraction of ethical judgements, a simplistic moralising (an imprint of '68) view of history, a desire to explain it through some elementary schemes, through the relationship of symbolic figures, the vehicles of opposite principles: the Hellene and the Barbarian, the Teacher and the Rebel, the Shaman and the Leader; and with them the shock images of literature and mythology; Orpheus and Prometheus, Wotan and Prospero, Panurge and Abbaye de Jhélème—a veritable parade of allegories that is part and parcel of the "new philosophy". But all these symbols and allegories are way up in the stratosphere.

And as if sensitive of that, Dollé, in his book *L'odeur de la France*, looks for stability elsewhere. *L'odeur de la France* is a complex bouquet, and reviewers have found in it the odour of decay. Of course, the odour of one's country is differently perceived (one recalls the words of Tyutchev, 19th century Russian poet: "Talent looks for spots on the sun and sends acrid smoke on its own country!"). Dollé, however, finds something fresh in the odour of France. Or, to be more correct, in the earth of France, or to be still more correct, in Auvergne or Touraine, in places where it is not covered with asphalt. He finds memories of his forefathers, the mother tongue, living tradition. These are all undoubted values, authentic ones, they can be touched figuratively, even literally. There is nothing new in this intellectual play; it has been used time

and again in literature and the arts. But if in the arts it is justified, at least to a degree, one has the right to expect something much more than bland statements from the philosopher. Dollé's book is a "landscape with a philosopher", but a blindfolded philosopher seeking to believe in the truth of the existential landscape around him.

And so, on the one hand, there is the earth, on the other—the metaphysical stratosphere, the two poles that engage the ethical thought of the "new philosopher". Everything in between is beclouded.

From what we have said about *L'odeur de la France* it should be obvious that it is a piece of publicist writing rather than philosophy. The same applies to some of the other works of the "new philosophers". All of them incline towards publicist writing, to a variety of belles lettres. Generally speaking, the movement of philosophy towards belles lettres has long been observed in the West (in France it has found its clearest expression in the existentialists Sartre and Camus). As if ashamed of its rigorism, philosophy tends to the more sensual enchantments of literature and art, which give thought symbolic capaciousness rather than exactness. And philosophy was not unjustified in doing this. There were certain justifications: the crystalline structure of classical logic which, at a time when the spiritual bounds have been substantially widened, is revealing its limitations (limitations and not obsolescence). On the "new lands" intuition, as now everyone acknowledges, has proved an indispensable helper, and approximate, diluted concepts (i.e., closer to the artistic structure of thought) have proved more suitable than precise concepts. All that is true, but the movement of bourgeois philosophy towards artistic forms has acquired—and "new philosophers" are proof of this—the character of a drift that is diverting science from its true course and depriving philosophy of its specific nature of a definitely patterned discipline.

There is also this: the "new philosophers" are heading for artistic latitudes dominated by modernism, by Joyce, Proust and Kafka. Incidentally, this drift away from professionalism so characteristic of the "new philosophers" is apparently powered by the same winds which in avante-guarde art produce the suicidal drift away from professional craftsmanship and defuse art in the endless flood of workaday detail.

No picture of the "new philosophers" would be complete without mention of those who are endeavouring to remain on the *terra firma* of science. These "new philosophers"—let us call them scienticists—claim to be the builders and adherents of a new strictly scientific philosophy, more scientific than anything hitherto known. But to repeat: the "new philosophers" are not a school, and there are fundamental differences between them. However, we should not

hurry to conclude that the "scienticists" among them are the antipode to the "moralists". The *terra firma* chosen by the scienticists is within the bounds of special sciences, notably those in which structuralism has made significant headway. The scienticists are the successors of the structuralists but unlike them, and together with other "new philosophers", urge a "return to philosophy (or to ideology, a term they sometimes prefer), which they understand as progress.

"We see ourselves as pioneers of ideology, explorers of uncharted territory!"[8] Jean-Marie Benoist, one of the more prominent scienticists among the "new philosophers", declares with an air of profundity. Older-generation structuralists (Lévy-Strauss, Foucaul, Barthes, Lacan and others), continue in their own particular fields of research, guided mainly by ideas pertaining to that field and making no serious effort to go beyond concrete investigations. The scienticists take these concrete investigations—in ethnology, biology, the "archaeology of knowledge", semiotics of the unconscious, linguistics, and so on—and combine them with a structuralist reading of Marxism, which is thus automatically reduced to a particular science, and all this is made the basis for a new philosophy, or ideology. The nucleus of this new philosophy is the concept of man freed of all subjectivism with a mask in place of individuality.

Alas, if the terra is firma, then it is much too narrow. Philosophy is not a superstructure on some particular sciences and its attitude to special sciences is much more complex. In the final analysis, the special sciences are for the scientistic "new philosopher" his particular domain—limitless in his field, but restricted in a more general sense. Significantly, even among the "new philosophers" who hold that view and are scrupulous adherents of the scientific method, there is a tendency to underestimate classical logic and, at the same time, move nearer to belles lettres, chiefly of the avante-guarde variety (description of structures is considered a kind of "artistic activity").

The narrowness and one-sidedness of the "new philosophers" have largely determined their failure to understand Marxism. Generally speaking, their attitude to Marx differs. Some have made him the target of constant attacks, repeating the shopworn arguments of bourgeois Marxology, which in one or another way falsifies Marxism. Others emphasise their respect for Marx; some even proclaim themselves Marxists. It is probably true to say that Marxism now commands a greater interest in the West than ever before. One of the "new philosophers", Nicos Poulantzas, says that "the present era has given rise to a mass of new ideas, and yet the overriding result of 1968 is the hegemony of Marxism".[9] This is an eloquent general appraisal. But the "new philosophers" who profess adherence to or support for Marxism usually borrow only one part

of Marxism. Its humanism, for instance, or scientific method, but never the two together, and try to combine it with Freudism. Marxism in all its implications is inaccessible to the "new philosophers". That is but a natural result of their ostentatious neutrality, their radical-neutral position in the battle of ideologies.

"The policy of radical neutrality" in the end turns out to be a variety of a bourgeois policy, writes *La Pensée,* the theoretical organ of the French Communist Party. It notes the "homogeneity of the positions of the 'new' philosophers and those of the 'older' generation with whom they are locked in battle." [10] But the fact that a sizeable segment of the "new philosophers" are merely wandering "around Marx" is added proof of the immense authority of Marxism.

This manoeuvring between the scientific and artistic approach is one reason why the writings of the "new philosophers" are often incomprehensible. Reading them, Voltaire and Anatole France would probably be at a loss to understand some of their French expressions. Their avante-garde coinages and new scientific jargon clash with each other in a situation (which is not the guilt, but rather the misfortune of the "new philosophers") that can only be described as the general disorganisation of the language within the framework of bourgeois culture, the loss of the level of mutual understanding that was part of the classical epoch. Disturbed by the knowledge that he is not "master of the words and their meaning", the "new philosopher" often finds himself in a complicated dance with words, with the latter constantly changing their meaning. Different "new philosophers" ascribe different meaning and connotation to one and the same word. In reading Dollé, for example, one has to get used to the contention that "thought" is good and "knowledge" is bad. For Benoist "knowledge" is very good, whereas "rationality" is bad.

There is this curious detail. For all the intricacy and vagueness of their writing, the "new philosophers", Benoist says, have a weakness for transmuting complex theses into leaflet-style simplicity. And not even leaflet-style, but into sloganese, into terse-badge inscriptions ("make love, not war"). What is this—the aftermath of 1968, or a persistent feature of the new "being of ideas"? A kind of mask people are supposed to wear? And their audience reacts in the same slogan-like fashion. One example: "When I listen to Dollé my heart is beating louder than a big bass drum" (the opinion of an Anglo-American audience quoted in *Nouvel observateur*). Could it be that the mass media are creating an atmosphere of universal simplification bordering on vulgarisation?

The media have a special role vis-à-vis the "new philosophers". For they avoid the official sciences and need an expression outlet.

They have found it in the mass media, which are all too ready to serve as a market-place for their ideas. The mass media are a vehicle for intellectual marketing, where the enterprising spirit coexists with bohemian laxity.

Of course, philosophy is not the kind of merchandise that appeals to the general public. Dollé has this rather curious remark on the subject: "Take the two biggest philosophers in the hundred years since Marx: Nietzsche and Heidegger. No one reads them." [11]

The interesting thing here is not who should be considered the greatest philosopher after Marx, but who reads these great philosophers. As for the "new philosophers", it is hard to say whether anybody reads them, though they do sell well. After publication in *Les Nouvelles littéraires* of samples of their writing, they became a veritable sensation, and the same goes for some of their books. Such is Paris intellectual life. Dollé says it has its "circus element". And naturally enough, that element takes on more prominence if a philosopher makes his way into the arena of the big press or television. Here much is expected of him—he must "create an image", "say his piece", and it must be something catchy, easily understood and engaging: "Thinker, tell us something good!"

And the thinker tries his best performing philosophical entrachats. Appearing on a French radio programme, Jean Baudrillard said that death is the only living force of our society. Well, this tragic mask is but one of the entrachats. Perhaps the listener will like the paradox, perhaps he will even find something instructive in it. Or this from Jean-Paul Dollé: "Reality is not serious. Reality is a paper tiger!" [12] With Dollé fear of reality goes hand in hand with contempt of reality. Engaging, but not very novel; perhaps comforting for those who need comforting. Or this great discovery by Françoise Lévy in a radio programme: "Marx was only a German petty-bourgeois." That's not new either. If I am not mistaken Taine said something of the kind in the last century, but for the media this is always welcome: everything that can be used to discredit Marx and Marxism gets priority treatment. For there is always the chance that an old stupidity uttered by a "new philosopher" might be swallowed by someone as a great discovery. Benoist demands: "Man must be put on trial as a being, as a full-fledged subject living for himself, transparent in his reflexes", and much more in the same vein.[13] This can be interpreted to suit all tastes. It can be, for instance, understood in the sense that henceforth no one is under obligation to understand anything, and so on, and so forth.

Philosophising *ex cathedra* has the advantage that one does not have to shout from the street corner as a newspaper vendors do.

And by way of conclusion. The "new philosopher" wants to be a witness of his time. In a certain sense he is, and that lends interest to what he has to say. However his philosophy often risks being but a testimony to its own poverty.

NOTES

1 *Les nouvelles littéraires*, June 10, 1976, p. 15.
2 M. K. Mamardashvili, "Analysis of Consciousness in the Works of Marx", *Voprosy filosofii*, No. 6, 1968.
3 André Glucksmann, *Les maîtres penseurs*, Paris, 1975.
4 *Le nouvel observateur*, No. 609, 1976, p. 66.
5 *La quinzaine littéraire*, April 1-15, 1976, p. 18.
6 *Les nouvelles littéraires*, June 10, 1976, p. 16.
7 Ibid., p. 20.
8 Jean-Marie Benoist, *La révolution structurale*, Paris, 1975, p. 39.
9 *Le nouvel observateur*, No. 609, 1976, p. 68.
10 *La Pensée*, No. 197, February 1978, pp. 69-70.
11 *Le nouvel observateur*, No. 609, 1976, p. 63.
12 *L'Express*, September 6-12, 1976, p. 74.
13 Jean-Marie Benoist, Op. cit., p. 61.

MAN AND NATURE

Nature and Primitive Society

VLADIMIR KABO

In modern literature three views on the interrelationship between primitive society and nature prevail.

According to one, primitive people lived—and where society remains on the stage of the primitive communal system, continue to live—in full harmony with nature, introducing no destructive changes to it. In this primitive societies allegedly differ fundamentally from societies of higher development levels.

Actually that is not so. Mankind began to have a destructive impact on nature very early, and as the means of production improved, it became more profound and diverse. In the Upper Palaeolithic, man already contributed to the extermination of a number of large animals, including such giants as the mammoth (the extinction of which is due less to climatic changes than to the organised actions of man as a hunter). The perfection of hunting techniques, intensification of hunting and growth of the population leads to mounting annihilation of game. M. Budyko, for example, describes the Upper Palaeolithic as an age of "ecological crisis".[1]

Studies of ancient societies offer extensive material confirming the role of human activity in the extinction of animals during the late Pleistocene in Eurasia, South and North America, and Australia.

In the view of the English scientist K. Butzer, the final stage of the Pleistocene was the beginning of ever increasing change of the natural environment by man.[2]

The transition from the Palaeolithic to the Mesolithic was accompanied by profound changes in the economy, way of life and social relations in many respects associated with the end of

mass hunting for large herbivorous animals. Man was compelled to seek new means of subsistence. The active search for new ways of mastering the ecological environment was frequently accompanied by attempts to create more favourable conditions of life and hunting. The aborigines of Tasmania, whom the Europeans found at a stage of development corresponding to the Upper Palaeolithic, and who died out by the end of the 19th century, regularly burned vegetation on large areas of the island. The ecological effect of those fires over thousands of years was very great and irreversible: the nature of vegetable growth and the top soil changed on large areas, moist forests were replaced by shrubland and savannas, and the climate changed. Fire removed impassable forests from whole regions, which was a boon for the Tasmanian hunters, but at the same time it destroyed the plant cover and enhanced soil erosion.

The aborigines of Australia, who in the 19th century were on the whole at a Mesolithic stage of development, while some tribes were in the Upper Palaeolithic not only wiped out the large marsupials of a whole continent, but, like the Tasmanians, regularly burned down shrubs and grasses on vast areas. In the view of some scientists, this resulted in the disappearance of forests and other unfavourable consequences.

The adherents of another long-standing view claim that primive people led a miserable semi-starvation existence in eternal quest for food and confrontation with nature. They are opposed by G. Grey, one of the explorers of Australia. He ridiculed their views as absurd and showed that the reverse was quite true. "In his own district," he wrote, "a native...knows exactly what it produces, the proper time at which the several articles are in season, and the readiest means of procuring them. According to these circumstances he regulates his visits to the different portions of his hunting ground; and I can only state that I have always found the greatest abundance in their huts."[3] Except for two relatively brief periods of the year, the hottest and rainiest, when there is indeed a shortage of food, at other times the aborigines can "obtain, in two or three hours, a sufficient supply of food for the day".[4] Nor is there any need for them to spend more time in search of food, since they know practically nothing about preserving it. What Grey writes fully accords with reports of other 19th-century explorers about aboriginal life in other parts of the continent. The same is true today where native Australians lead their traditional way of life of hunters and gatherers equipped with primitive implements of labour. Thus the adult members of two communities studied in 1948 worked on average only 4 or 5 hours a day. That time was sufficient to provide every member of the group with adequate food.

According to R. Lee, who studied the Kung Bushmen, representatives of the indigenous population of Southern Africa, in 1964, an adult had to work only 2.5 six-hour days a week to provide sufficient food for all members of the group. This is 15 hours a week, or 2 hours 9 minutes a day. The observations were carried out in July and August, that is, a time of the year transitional from more favourable to less favourable conditions, and hence sufficiently representative.[5] It could be recalled that the Bushmen, like the aborigines of Western and Central Australia, live in extreme natural conditions. According to J. Woodburn, the hunters and gatherers of the Hadza tribe in East Africa spend on average not more than two hours a day getting food.[6]

Many hunters and gatherers inhabiting regions with extreme ecological conditions suffer regularly from hunger. However, the picture presented above is on the whole typical of most pre-agricultural societies. The conditions in which Palaeolithic communities lived also varied, but they were, on the whole, more favourable than those in which contemporary hunters and gatherers live. Huge quantities of animal bones have been discovered at some Palaeolithic camps; this is indicative of the large scale of battue hunting and the sufficiently favourable natural conditions in which the primitive hunters lived. They destroyed more animals than they could consume. The purposeless extermination of vast numbers of animals, notes S. Zamyatnin, much greater than could be rationally used, was typical for this type of battue.[7]

According to the third widespread view, primitive hunters and gatherers add nothing new to the processes taking place in nature and simply adapt to them passively; they do not enrich the treasure-trove of nature and only use its gifts. Facts refute this notion, too, indicating that hunters and gatherers do not simply parasitise on nature, and their action on it is not only of a destructive character. Attention has long been drawn to the fact that the culture of primitive man displays features which can be regarded as prerequisites of a producer economy. The aborigines of Australia not only know how to tend wild plants but attempt to plant some of them. Even before colonisation societies isolated from the influence of agrarian cultures knew primitive methods of irrigation, built irrigation dams and man-made bodies of water, which prevented drying of the land in arid seasons. This is an example of deliberate, purposeful action on nature. The Semangs and Senois, representatives of the indigenous population of the Malakka Peninsula, occasionally planted wild plants.

Agriculture was not "invented": man began to cultivate plants while still at the stage of food-gathering. The same can be said of the domestication of some types of animals. Earlier we mentioned

fires employed by the Australians and Tasmanians as an example of destructive action on nature. But why did they burn the old grass on their hunting grounds? To obtain pastures with fresh green grass that would attract herds of kangaroos and thus increase their numbers. This is manifestation of deliberate concern of hunters for maintaining the main source of meat at an optimum level. Such spontaneous comprehension of the laws of nature and cause-and-effect links spanning considerable periods of time is remarkable. R. Jones calls it "fire-stick farming".[8] This was not, of course, farming—it could rather be called primitive animal husbandry—but in consequences and effect upon nature it can, to a degree, be compared with farming. A new artificial environment was created by the will and hands of man. That was long before the appearance of agriculture, with which we are used to associate the appearance of anthropogenic, "humanised" landscape. T. Mitchell, one of the first explorers of Australia, wrote that fire, grass, kangaroos and people in Australia, all depended upon one another, and if one disappeared the others could not exist.[9]

Mitchell noted the existence of a kind of ecological equilibrium in which the primitive hunter was the active factor. A part of the ecological system, he was at the same time a force regulating the interactions of other parts in his interests. However, as a consequence of primitive man's regular action on the ecological system, the ecological equilibrium is sooner or later disturbed, and far-reaching changes which he cannot foresee occur in nature. This indicates that even at that early stage of social, economic and cultural development people not only adapt to the environment but seek to influence it actively. And they do this not just by their presence as a part of the ecological system but frequently quite deliberately.

I would call this process active adaptation. Thanks to the universalisation of the mechanisms of active adaptation, human society, unlike communities of other biological species, was able already at the stage of food-gathering to adapt to life in all ecological environments and populate almost the whole planet. This ability of human society is based on socio-cultural adaptation mechanisms. Hence the primitive society's system of active adaptation to environmental conditions should be called *socio-cultural adaptation*. It includes such elements as social organisation, work implements, clothing, food, religious and magic rites, etc.

At early stages of socio-cultural development social institutions occupy a leading place in this system. For, the lower the level of the productive forces and the material and technical equipment of society, the greater the importance of social organisation in the process of adaptation to environmental conditions. Active adaptation is effected primarily through social mechanisms, primarily

those whose importance is determined by their economic function. In primitive society, the structure of social adaptation is the prime element of socio-cultural adaptation as a whole.

Let us examine the structure of social adaptation with the help of a typical example—the organisation of social production by Tasmania's aborigines. We have already mentioned that at the time the Tasmanians came to know Europeans they were at a stage corresponding to the Upper Palaeolithic, which is why Tasmanian ethnography is so important for reconstructing the foundations of social structure in the Palaeolithic.

* * *

Tasmanian social life, like that of other hunters and gatherers, centred around the community, the basic socio-economic unit of primitive society. As the leading productive collective, the community is, accordingly, the society's basic structural unit. It comprises several families and owns a certain territory which is the source of the means of existence. The main features of the Tasmanian community, like any other hunting and gathering community, is relative stability and territoriality, that is, economic links with a definite territory.

Other socio-economic entities are: the economic group, purposive group, and temporary alliance of communities. The economic group is a part of the community comprising several families. In the course of economic development of the territory, at specific seasons (when it is difficult or impossible for the community as a whole to engage in hunting and gathering) the community breaks up into economic groups, economically independent, dynamic, of varying composition and numbers, which occasionally breaks up into individual families. When the conditions for acquiring food change, the community may reunite again. The aggregate of economic groups is the community itself in the process of developing its territory. This is a form of active adaptation of the community to environmental conditions and the requirements of economic activity. Variations in the number of economic groups and the nature of their movement over the territory are dictated by economic interests, which are at this level of development closely dependent on natural conditions. The recurrent cyclic nature of these variations and movements is linked with hunting, gathering or fishing; with changes in nature (increase or decrease of foodstocks, seasonal and vegetation changes, population cycles, animal migrations, etc.). At the same time the size of economic groups depends upon the stability of local natural conditions. In more favourable conditions the groups are larger, in less

favourable ones they are smaller. The economic group is vivid manifestation of the primitive community's being dynamic, flexible and adaptable to changing conditions.

The purposive group is, as a rule, formed according to natural divisions of labour by sex and age for performing a single specific economic or social task (for example, groups of hunters or women gatherers, or sometimes warriors or participants in some ritual). A purposive group may include all the men of the economic group that hunted together for big game, or all its women, often with children, who together gathered plants or molluscs for food or hunted for small animals.

Temporary associations of the communities of one tribe, and sometimes neighbouring tribes, usually concentrated at specific places and seasons for economic or social activities requiring a large number of participants—battue hunting, rituals, etc. These groups also appeared in places where animal or vegetable food abounded at certain seasons of the year.

Depending on local conditions, Tasmanian communities numbered from 30 to 160 members. Economic groups usually consisted of 20 to 50 persons. Purposive groups usually numbered 10, 20 or more, depending upon the size of the economic group. Temporary units of communities numbered from 200 to 600 people.

The break-up of communities of hunters and gatherers into families, and their unification for various purposes are of an episodic character. The same is true of purposive groups. All demographic conditions (population growth, density, etc.) being equal, the size of the community and economic group is, as it were, a function of the natural geographical environment.

The basic cell of the social structure of the Tasmanians, like that of other hunters and gatherers who could be ethnographically observed and studied directly, was and remains the family, comprising parents and children, and sometimes other next of kin. At the other pole of the social structure is the tribe as a stable association of several communities sharing a common language. Like the community, the tribe is associated with a definite territory, but it is a comparatively loose, amorphous entity as a consequence of which its economic functions are negligible, a community, as mentioned before, being the basic economic unit of the society.

The organisational and structural system of social production, while remaining basically the same, varied in different geographical areas of Tasmania in accordance with the type of economic activity. The inhabitants of Eastern Tasmania led a nomad life over extensive tribal territories, which made it possible for them to conduct a balanced economy based on seasonal camps on the coast

or in the interior. The aborigines of Western Tasmania led a semi-sedentary life oriented mainly on fishing. Their tribal territories extended along the coast (unfavourable geographical conditions depriving them of the possibility of economic activity in the interior). In spite of that, the structure of social adaptation outlined before remained basically similar all over the large island. The same is true of other communities of hunters and gatherers, whatever the natural geographic zones of the globe they inhabit. Thanks to its flexibility, formed over thousands of years, the structure of social adaptation, while remaining essentially the same, enabled and enables communities of hunters and gatherers to survive in the most diverse natural conditions. This was as it were a firm foundation created by evolving society, which enabled it to populate and develop virtually the whole planet and survive in the most difficult conditions. The model suggested here basically reflects the primary, universal structure of social adaptation on which primitive society has relied probably from remotest antiquity.

The principles of the organisation of primitive social structures are remarkably similar and of a universal character. All that varies is their architectonics, the relationship between individual structural elements, but not the structure itself. Everywhere at the basis we find the community as the basic socio-economic collective of primitive society with its flexibility, dynamism, ability to adapt to varying conditions and periodically break up into economic or purposive groups, with its territoriality and relative stability. The secret of the universal character of this system lies in a combination of the community's stability, flexibility and adaptability.

Thus, the way of life of the aborigines who late in the 18th century inhabited the area of what is now Sydney (Southeast Australia), was of a definitely seasonal nature, with the community as a means of social adaptation to changing conditions. In spring and early summer, when large schools of fish appeared, the aborigines got together in communities. In winter when fish grew scarce, the communities scattered along the coast and many men went off hunting in the interior.

Ethnographers observing the aborigines of Northern Australia note that their way of life and occupation vary completely with the seasons of the year. For several months the men hunt land animals and wander in small economic groups; the rest of the time they live in communities in seasonal camps on the coast, fishing and hunting for marine animals. Their economic activity, and accordingly the succession of periods of concentration (communal life) and deconcentration (life in economic groups or separate families), is determined by the succession of the rainy and dry seasons.

The same principles of social adaptation can be found in South and North America, Africa, Southeast and South Asia, in the Arctic. Material on this is so extensive that a simple list of sources could fill a whole volume of bibliography. I shall cite but a few examples relating to different geographical areas. N. Gubser writes that the Nunamiut Eskimo community is a plastic, changeable alliance of individual households operating in the locality offering the best conditions for caribu hunting. In autumn and spring the households join in communities in anticipation of caribu migration.[10] The rest of the year they go out in search for food individually. Other groups of Eskimos live in other ecological conditions, and their economic activities are different, but the system of social adaptation is the same. Seal hunting, writes D. Damas, is the only reliable source of subsistence in wintertime and the reason for unification of the central Eskimos in large winter collectives. At other periods of the annual cycle these collectives break-up into small groups better adapted for hunting other animals.[11]

In conditions of the damp tropical forests of the Andaman Islands, Onge hunters and gatherers like Australians and Eskimos, move in small groups over their hunting and gathering grounds, availing themselves of the sources of vegetable or animal food offered by nature throughout the annual cycle. But during the rainy season the communities rejoin and settle in large communal homes.[12]

In the absence of contacts with more developed societies, the basic unit of the social organisation of the Bushmen inhabiting the deserts of Southern Africa is the stable community, the existence, structure and dynamics of which wholly depends upon ecological factors and the needs of production. The community is the basis for the formation of mobile economic groups the size and composition of which varies constantly.[13]

In South America, tribes totally unfamiliar with agriculture are very rare. In most cases we find rudimentary forms of agriculture which, however, have not wholly superceded food-gathering. One such tribe is the Nambikwara in Brazil. Depending upon the season of the year, the Nambikwara engage mainly in either gathering or hunting or farming. In the rainy season, they live a sedentary life in communities along river banks and cultivate the land. In the dry season, they, like typical hunters and gatherers, roam in small economic groups comprising several families and engage exclusively in gathering and hunting. The Nambikwara are essentially semi-sedentary hunters and gatherers for whom primitive agriculture is a temporary occupation.[14]

Seasonal changes significantly influence the economic activity, way of life and regular succession of periods of concentration and

deconcentration of hunter-gatherer communities in most natural-climatic zones of the world.

The sources of a producer-type economy are rooted in food-gathering. The prerequisites for a producer economy are: relative stability of the primitive social structure alongside with an inherent ability to develop; collective ownership of land, the basic means of production; economic links of the community with a specific territory; correct succession of economic activity according to the natural cycle. These and other fundamental properties of the hunter-gatherer society constitute the socio-economic base for the formation of a producer economy. The main motive force of the transformation of food-gathering to the producer economy is the system of socio-economic relations itself.

Thus, the dependence of a primitive hunter-and-gatherer society on natural conditions is probably no greater than of a society based on a producer economy. The specific features of the former are that, being technically inferior, it relies mainly on mechanisms of social adaptation evolved over thousands of years to oppose the pressure of the natural-geographic environment. In the words of Karl Marx, the primitive community with its typical natural unity with objective, naturally formed conditions of production was the "first great productive force".[15] The community itself mediates the relationship of primitive men to nature.

There are two aspects to the relationship of primitive society to nature: the objective economic and the subjective ideological. The former finds expression in the community's ownership of a definite territory (its source of existence) and the economic development of that territory. The second aspect is a reflection of the economic attitude towards the land in ideological form. Thus, the subjective ideological attitude of the Australian aborigines to the land is expressed in the links of the tribe with totemic sanctuaries on the community's land.

At the same time, primitive man's attitude to nature also includes the epistemological sphere, the vast domain of man's cognition of the surrounding world, the earth and the Universe. This system of notions organises social experience and brings order into the chaos of phenomena, thus helping the society to master the world in practice. Man began to accumulate systematic knowledge about the vegetable and animal world back in the Palaeolithic: 15,000 years ago, if not earlier, primitive man was familiar with the cyclic character of life in nature, he observed the phases of the Moon and knew how to record all this, having knowledge of the rudiments of writing and counting.[16] Ethnography also testifies to primitive man's knowledge of certain laws of nature, as indicated in the foregoing discourse.

It is impossible to imagine the advance of primitive society and culture as something lacking a conscious attitude towards nature and the processes in it, towards the eternal cycle of life. Man started the producer economy already equipped with a system of knowledge of the surrounding world, reflecting thousands of years of observation, experience and practice.

NOTES

[1] M. I. Budyko, *Global Ecology*, Moscow, 1977, pp. 239-254 (in Russian).

[2] K. W. Butzer, *Environment and Archaeology. An Ecological Approach to Prehistory*, London, 1972, p. 484.

[3] G. Grey, *Journals of Two Expeditions of Discovery in North-West and Western Australia*, London, 1841, Vol. 2, pp. 262-263.

[4] Ibidem.

[5] R. B. Lee, "What Hunters Do for a Living", *Man the Hunter*, Chicago, 1969; "Kung Bushman Subsistence: an Input-Output Analysis", *Environment and Cultural Behaviour*, New York, 1969.

[6] J. Woodburn, "An Introduction to Hadza Ecology", *Man the Hunter*, Chicago, 1969, p. 54.

[7] S. N. Zamyatnin, "Some Questions of Studying the Economy in the Palaeolithic", *Proceedings of the Institute of Ethnography*, IV, Moscow-Leningrad, 1969 (in Russian).

[8] R. Jones, "Fire-Stick Farming", *Australian Natural History*, 1969, Vol. 16.

[9] T. L. Mitchell, *Journal of an Expedition into the Interior of Tropical Australia*, London, 1848, pp. 306, 412-413.

[10] N. J. Gubser, *The Nunamiut Eskimos*, New Haven, 1965, p. 61.

[11] D. Damas, "Environment, History and Central Eskimo Society", *National Museum of Canada*, Bulletin No. 230, 1969, pp. 283-284.

[12] Randhir Kumar De, "The Onge of Little Andaman", *Vanyajati*, 1957, Vol. 5, No. 1, pp. 14-17.

[13] *Kalahari Hunter-Gatherers: Studies of the Kurg San and Their Neighbors*, Cambridge, 1976; E. Marshall, *The Kung of Nyae*, Cambridge, 1977.

[14] C. Lévi-Strauss, *Structural Anthropology*, New York, 1963, pp. 109-110, 113; L. Boglar, "The Nambikwara—a Marginal Group in Brazil", *Sovietskaya etnografia*, No. 3, 1972.

[15] K. Marx and F. Engels, *Works*, Vol. 46, Part I, p. 485 (in Russian).

[16] A. Marshack, *The Roots of Civilisation*, New York, 1972; B. A. Frolov, *Numbers in Palaeolithic Graphics*, Novosibirsk, 1974 (in Russian); B. A. Frolov, "The Sources of Primitive Astronomy", *Priroda*, No. 8, 1977.

Peace and Happiness of Children

From the Editors: On September 7-11, 1979, Moscow was the venue of the World Conference "For a Peaceful and Secure Future for All Children", held within the framework of the International Year of the Child. It was attended by representatives of many international, regional and national women's, youth, and trade-union organisations, by representatives of the UN and its specialised agencies, as well as by prominent public and government figures, writers, journalists, and members of parliaments.
The Conference adopted three major documents whose humane character, spurring to action, should be of considerable public interest, we think.
The texts of these documents follow below.

APPEAL

To the World Public, Public Organisations and Movements

1. We, the representatives of 432 international, regional and national organisations from more than 130 countries gathered for the World Conference "For a Peaceful and Secure Future for All Children", in Moscow, September 7-11, 1979, appeal to you, women and men everywhere, mothers and fathers:
2. The destiny of humanity depends on what we, the people do today to build a peaceful, secure and just future for our children. It is our particular responsibility to safeguard them from the horrors of a nuclear catastrophe.
3. The children are our future. Yet in many countries millions of children go hungry, millions of them die from epidemics, for lack of medical care, millions of them are illiterate and have no access to education. In order to solve these problems it is necessary to eradicate the principal causes of underdevelopment: colonialism, neocolonialism and all forms of exploitation of human beings, and to establish a New International Economic Order.
4. Apartheid, social inequality and racial discrimination continue to destroy the lives of children in many countries. Fascist and

reactionary dictatorships, militarism and imperialism deprive children of the most elementary rights and human dignity.

5. Tens of millions of children have no possibility to study, millions are exploited as a cheap labour force. This is not only gross injustice; it does irreparable harm to the moral and physical health of the growing generation.

6. Workers in industry and agriculture, teachers, doctors, scientists, workers in culture and in the mass media, members of trade unions, and political parties, women's, youth, students' and children's organisations, movements and associations, mothers and fathers!

7. We call upon all of you to create conditions for and to guarantee a happy and secure childhood for our children in a peaceful world.

8. We appeal to each of you to unite your efforts in the fight against wars and the threat of war, for detente and mutual confidence among nations, for a ban on weapons of mass destruction and for disarmament, for strengthening the policy of peaceful coexistence. There is no more urgent task for humanity than to guarantee the right to life—the basic human right of every woman, man and child. There is no more terrible and direct threat to the lives of the children than war.

9. Today we have every possibility to ensure a stable peace. An earnest of this is the relaxation of international tension, the growing forces for peace and social progress.

10. We call upon you to actively work for the creation of real conditions that will guarantee the rights and interests of all children and satisfy their need for adequate nourishment, for effective health care and education, for physical, moral and cultural development. It is the duty of all of us to contribute to the creation of conditions for the allround development of each child.

11. The possibilities to achieve these aims are varied, but they do exist as was clearly manifested during the International Year of the Child.

12. In trade unions, in women's and youth organisations and other national and international movements, in religious, social and cultural associations, in parliaments and local bodies, in factories, towns and villages, wherever you are, fight for a better life for all children, for

— a clear sky, a sky without rockets and bombers,
— the robust health of all children,
— a future, where hunger and malnutrition have no place,
— the happiness of seeing our children educated and prepared to take their place in society as responsible citizens.

13. Let us strengthen our unity in the interests of the morrow of our planet—our children and grandchildren!

Concern for the children's well-being must be constant!

Let every one contribute to the cause of peace, democracy and social progress, to achieving the humane and lofty aims embodied in the slogan "For a Peaceful and Secure Future for all Children!"

Participants of the World Conference

APPEAL

of the World Conference "For a Peaceful and Secure Future for All Children" to the 34th United Nations General Assembly, to the Governments and Parliaments of All Countries of the World

1. We, the representatives of 47 international, regional, and 385 national organisations in more than 130 countries gathered in the International Year of the Child for the World Conference "For a Peaceful and Secure Future for All Children", in Moscow, September 7-11, 1979, address the 34th United Nations General Assembly, the Governments and Parliaments of all countries.

2. We speak on behalf of hundreds of millions of men and women—members of major public organisations and movements of various orientation, which are broadly and prestigiously represented at our Conference whose keynote was unity and cooperation in the name of the rights and interests of the child.

3. We note that during recent decades new possibilities were opened for an improvement of the living conditions of children thanks to international detente, to the broader understanding and cooperation among peoples, to the successes of the struggle of the broad public for peace, national liberation, justice and democracy. The adoption of the Declaration of the Rights of the Child by the United Nations in 1959 was an important factor in the protection of the rights and interests of the younger generation.

4. While stressing that concern for children is of decisive significance for the whole of civilisation, we state with satisfaction that the proclamation of the International Year of the Child met with great response throughout the world, and we consider it necessary to continue and further develop the activities aimed at the constant improvement of the position of children, paying special attention to children who are in the most disadvantageous situation.

5. Indeed, twenty years after the proclamation of their rights, hundreds of millions of children still suffer from hunger, illiteracy, racism and apartheid. Millions of them are deprived of

pure drinking water and medical care; thousands of children are dying, victims of aggression, war and armed conflicts.

6. The arms race threatens the very life and future of children. It deprives them of the resources that could ensure the economic and social preconditions for their development. Man has walked on the moon, but millions of children have never held a book in their hands.

7. Being convinced that the accomplishment of the tasks related to children's rights is inseparably linked with the national liberation of peoples, with development and social progress, with the democratisation of all social life and depends on the general situation in the international arena;

8. Being convinced that the United Nations disposes of a wide spectrum of international means of influence, and that Governments and Parliaments possess the necessary power to pass and implement laws in their countries, we call on you:

9. — to intensify your efforts in accordance with the UN Charter (1945) to save future generations from the scourge of war, to ensure international peace and security;

10. — to contribute to guaranteeing children—innocent victims of aggressions and armed conflicts—the right to a nationality and the stability of a home;

11. — to ensure respect for the rights of peoples to national identity, self-determination, independence and social progress as a guarantee of the fundamental rights of mother and child;

12. — to promote the restructuring of international economic relations on the basis of genuine democratic principles and the establishment of a New International Economic Order based on the UN Charter on the Economic Rights and Duties of States (1975), which will undoubtedly open up new opportunities for improving the situation of children all over the world;

13. — to ensure the rights of all children to adequate nutrition and housing, to health protection and medical care, and to education irrespective of race, colour, sex, language, religion, or conviction, national or social origin, property status, birth or any other circumstances bearing on the child or its family;

14. — to protect the child against all forms of violence;

15. — to recognise everywhere motherhood as a social function and to ensure a system of protection of mother and child in all countries bearing in mind that the child's right to health protection starts with the protection of motherhood;

16. — to do everything that child-care programmes in all countries be an integral part of the long-term and short-term economic and social development plans aimed at eliminating famine, malnutrition, diseases, illiteracy, exploitation of child labour and other social evils;

17. — to multiply efforts in seeking concrete ways for radically improving the situation of the younger generation in the near future;

18. — the adoption by the United Nations and the implementation by all its member states of an International Convention based on the Declaration of the Rights of the Child, that would formulate in detail the legal measures necessary for the improvement of the situation of children, would be an important step towards this goal.

19. — We call on the United Nations, the UN member states, their Governments and Parliaments.

20. — to spare no efforts and take action against all forms of aggression, economic domination, foreign occupation, colonial oppression, and genocide, which are violations of the norms of international law as well as of the rights of the peoples to self-determination and national independence;

21. — to do all in their power to consolidate and render international detente irreversible, to halt the arms race, to ban nuclear weapons and all other types of weapons of mass destruction, and to attain one of the major objectives of mankind—universal and complete disarmament—that would ensure a peaceful and secure future for all children.

22. We, the participants in the World Conference "For a Peaceful and Secure Future for All Children", believe that the United Nations, all its member states, their Governments and Parliaments must everywhere intensify their joint efforts to achieve the humane and noble objectives embodied in the motto of the Declaration of the Rights of the Child: "Mankind Owes to the Child the Best It Has to Give".

FINAL DOCUMENT
of the International Forum of Youth and Students

The International Forum of Youth and Students was held in Moscow on September 9-10 in the framework of the World Conference "For a Peaceful and Secure Future for All Children". The Forum was attended by representatives of 145 national, 13 international and regional organisations of various political orientations and philosophical views from 103 countries. The holding of the Forum was an expression of the desire of a broad spectrum of youth and student organisations to make their concrete contribution to the discussion and solution of problems connected with the position of children in modern society.

At the Forum there was a frank and fruitful discussion of the problems that bear on the position of children living in different

socio-political conditions, on their rights and possibilities for allround and healthy physical, intellectual and moral development. It was pointed out that in the countries which have in practice abolished social injustice and the exploitation of man by man, children enjoy all the rights proclaimed by the Declaration of the Rights of the Child adopted by the 14th Session of the UN General Assembly in 1959. At the same time, the Forum participants stated that, unfortunately, far from all the countries have as yet provided the necessary conditions for the harmonious development of the younger generation. Urgent help and protection are needed by the children living in the countries where anti-popular, fascist and dictatorial regimes are in power and where the "laws" of national and racial oppression rule. Children cannot defend their rights without any support. It is duty of the society to stand up for them and to guarantee their rights. Only a society which does its duty to the younger generation has a historical perspective and will deserve the gratitude of posterity.

The Forum participants are deeply convinced that in the present conditions the future of children and of all mankind wholly depends on whether a durable and lasting peace as well as economic and social progress in the world will be ensured.

The struggle to preserve life on our planet is a paramount task of the international cooperation of the public in the sphere of securing the child's rights. In this connection the Forum participants hail the successes achieved in the field of political detente and, at the same time, declare for complementing it in the military field, for the consolidation of the basis of peaceful coexistence. The signing of the SALT-2 Treaty by the USSR and USA is an important step towards preventing a thermo-nuclear holocaust and curbing the arms race. Further concrete steps must be taken in these fields.

The Forum participants resolutely condemn the forces of imperialist reaction and militarism which are trying to reverse the development of international life, are intensifying the arms race and violating the people's rights to free and independent development. They express the hope that the Madrid meeting in 1980 will serve to strengthen security, will make for a healthier international climate, will contribute to the development of cooperation in the European continent in all fields in accordance with the Helsinki Final Act. It is necessary to promote the spread of detente to other regions, the deepening of mutual trust between countries and nations.

Guiding themselves by the firm determination to pool their efforts to ensure a lasting peace and a better future for the younger generation, all the participants declared for holding in

future a worldwide representative forum of youth and students for peace and disarmament.

The Forum calls on the youth and students to actively launch, in cooperation with other anti-imperialist forces, actions of solidarity with the struggle waged by the peoples and the youth for freedom and national independence, for the right to a homeland of their own, for the eradication of the disgraceful system of racism and apartheid, for abolishing the consequences of aggressions and expansionism, of alien domination and foreign occupation, of all manifestations of inequality, diktat and exploitation in international economic relations, for democracy and social progress. In this connection the Forum participants showed great interest in the proposal to carry out various international youth and student actions on the problems of the development and restructuring of international economic relations on an equal and fair basis. They consider it their duty to make their direct contribution to the struggle against hunger and poverty.

The Forum calls on the youth and students to redouble their efforts in the struggle to solve the socio-economic problems of the younger generation, against youth unemployment, for the improvement of the living conditions, education and medical care of children and teenagers, for the eradication of the cynical exploitation of child labour.

The Forum participants attach great importance to the upbringing and education of the younger generation in the spirit of peace and mutual understanding, friendship and respect for other nations, intolerance of any manifestations of injustice. The work of youth organisations, of children's and teenagers' unions should also pursue these noble tasks. The Forum declares against the existing practice in some countries, of using children, study programmes, the mass media and other channels for the propaganda of war, militarism, violence and racial hostility.

Proceeding from the premise that social progress is possible, on the whole, provided people—the younger generation, above all—are ensured conditions for getting an education and for cultural development, the participants of the Forum expressed their interest in the joint convocation of an international meeting of youth and students devoted to the problems of access to education and culture.

Convinced that the close attention that was drawn during the International Year of the Child to the position of children and to the protection of their rights meets the interests of all peoples, and of the younger generation the Forum participants call on the broad public, on different political forces, on representatives of the mass media, on specialists in the field of child upbringing and

education, on scientists and artists, on trade unions, women's, youth, student, parents' and children's organisations to continue their activities and cooperation to ensure a happy and peaceful childhood and not to confine these activities to the International Year of the Child proclaimed by the United Nations. The participants of the Forum are convinced that attention to the problems of children—the future of all countries and nations—should be constant. Various activities such as international children's festivals, initiated in 1977, can contribute to this.

The Forum participants voice their satisfaction over the exchange of views that has taken place and note that the very fact of the holding of such a forum, as well as the broad representative participation of youth and students of various political, philosophical and religious views in it show that the fields of cooperation in the international youth movement have far from been exhausted and that in this respect there are numerous favourable possibilities and prospects for the future.

The Forum participants express their gratitude to the Soviet public, youth and student organisations for providing the conditions necessary for constructive and fruitful work.

Moscow, September 10, 1979

Physical Education of the Youth

ANATOLY CHESNOKOV

The founders of Marxism-Leninism attached great importance to physical education in the moulding of harmoniously developed individuals.[1]

In the first days of Soviet power Lenin, in defining the duties of the People's Commissar of Education, pointed to the need of introducing physical training in schools. The Rules and Declaration of the Uniform School stressed that the school should develop not only the mental, but also the physical abilities of pupils.

A resolution adopted by the Third Congress of the All-Union Young Communist League said that the physical education of the rising generation was a major element in the general system of communist education of the youth, aimed at moulding the harmoniously developed man.

The entire subsequent activity of our society includes the consistent implementation of this task. For this purpose, all kinds of mass sports and physical culture have been encouraged in our country, as an inalienable element in the life of each person.

Jean-Jacques Rousseau wrote that if one wanted to develop the intellect of one's pupil, one had to develop the physical faculties under his control. One should develop his body, make him strong and healthy so that he could become reasonable and wise. Let him always be in motion, let him become a man due to the strength of the body, then he will be a man due to his sound mind.

Intensifying activity, fighting hypodynamic regime and searching for ways for men today to achieve a greater capacity for work is a pressing problem not only for doctors, teachers and experts in hygiene, but also for public figures.

Many sociologists believe that physical culture in conditions of the scientific and technological revolution contributes to the fullest possible development of man's abilities and a harmonious moulding of his personality. Closely connected with the economic and intellectual life of society and with all aspects of communist education, physical culture, in turn, exerts a great influence on the development of the productive forces, the efficiency of men's productive activity, and, thereby, on society's progress as a whole.

That is why physical culture and sports are so popular in our country. Society is taking care of man's health.

Let us examine two basic problems of the education of youth connected with physical culture: the first is the role and significance of physical culture and sports in developing certain principal traits characterising the individual in developed socialist society; and the second—sports as a means of normalising the regime of young people's activity. Both these problems are multi-faceted and interconnected.

In physical culture and sports man realises the possibilities of transforming himself. Sociological investigations show that the leading motive of sports activities and raising the skill of Soviet athletes is the requirement to constantly reveal and develop new possibilities and qualities within oneself, assert one's personality and worthily represent and uphold the country's prestige in international competitions.

In this connection, an important task is to foster the interest in and the habit of systematic physical exercises and the understanding of their importance for man's allround development, his preparation for socially useful labour and defence of his Motherland. This expresses the social essence of the all-Union complex of physical exercises, called "Ready for Labour and Defence".

This complex is, as is known, a standard of the Soviet system of physical education. Young people in general, vocational and technical schools and higher educational establishments took a great interest in the programme and standards of this physical culture complex, which over a period of many years substantially contributed to the general improvement in health and greater work capacity.

On the whole, our system of physical education promotes labour activity, inasmuch as it enhances the functional possibilities and capacity for work of the human organism.

Physical education not only helps foster and consolidate many professional qualities and habits in young people, it also plays an important role in developing industriousness, forming the habit of conscientious work, and stimulating the general advancement of the individual's creative abilities.

Later, during the period of the adult man's work in the sphere

of production, physical culture and sports, apart from improving health and physical fitness in general, also influence his attitude to work, for, regulating the regime of labour and rest, they raise the tone of life, increase satisfaction with work, which, in turn, largely contributes to a sound moral and psychological climate in the family, work collective and society.

Going in for physical culture and sports has a great impact on man's moral make-up. This impact is the strongest when a person is young, during the period of his growth and development, when his outlook and convictions are taking shape.

Self-education is a major factor in ethical education, for it helps develop activity and independence in solving many concrete practical tasks, enables one to overcome egoism, reserve, isolation and other traits of character that obstruct human contacts.

Those engaged in sports evolve a definite positive ethical experience manifested in the purposeful character of their activity, emotionality in work and the ability to surmount obstacles in the way to reaching important objectives (training of strong will).

In my opinion, physical culture and sports give birth to special forms of human relationships requiring the observance of definite ethical standards: the need to take into account the interests of a collective, observe personal discipline, be honest and polite in sports competitions and display courage and selflessness. The development of these moral foundations of physical culture and sports becomes a sort of yardstick of ethical perfection required of the builders of communist society.

Sports competitions are an important means of educating a person, for they often place before him the need to display the most important qualities of human character. The educational significance of competitions is multi-faceted. Apart from influencing the participants themselves they have a tangible educational impact on the spectators, whose number has especially increased in our time due to mass media and television. Sports competitions form definite moral evaluations and convictions, give people emotional experience, foster an active attitude among the spectators towards not only the physical but also moral qualities of outstanding athletes.

Of especial importance is the role of international sports contacts which open up broad opportunities for internationalist education. The ties between athletes of various races and nationalities representing different ideologies and social systems, that are based on certain moral principles fixed in sports rules, help overcome national prejudices, engender the need of mutual exchanges in intellectual and athletic values, and merge on an ever greater scale with the struggle against all and sundry forms of

discrimination. Taking part in international meets, Soviet athletes display lofty civic spirit, patriotism and socialist humanism and foster a high fighting, competitive spirit in themselves.

The ethical nature of a person, as a social quality, always manifests itself in activity. In conditions of developed socialist society the social activity of each of its members is a characteristic feature, and fostering an active and positive attitude to life in a young person is of great significance.

Indicative in this respect are sociological investigations of the significance of physical culture and sports in making the attitude to life of all sections of the population, and first and foremost, the young people, more active. Many experts have reached the conclusion that a greater activity in life is inherent in people going in for sports from an early age. It has been found that among people regularly engaged in sports there are more advanced workers who are distinguished by a greater range of social interests, and take a more active part in various cultural initiatives, etc. It can be maintained that mass sports in which young people can express and assert themselves are a major means for improving their physical education. Sports in schools, in our view, can largely contribute to the upbringing of a new generation well developed physically and intellectually. It is important not only to give young people a good physical education, but also to develop a taste for sports among them, making this a natural requirement.

The physical education of schoolchildren is receiving ever greater attention of specialists in various branches of science everywhere. In the Soviet Union, as well as in some other socialist countries, scientific conferences and symposia have been held on questions of implementing the idea of physical improvement of students. The materials of these conferences and symposia testify to a certain discrepancy in the physical development of schoolchildren and the requirements of modern society. They also point to the need of firm control over the physical education of students.

It has been established that both physical overloads, just as physical inactivity, have certain limits beyond which pathological changes in the human organism may appear. Therefore, the properly organised regime of work and rest and the elimination of the phenomena caused by insufficient or too great physical loads that have a negative effect on the state of health, physical development and general capacity for work of schoolchildren, have become a problem of great social significance.

It is important to define the optimum volume of motor activity in school years, because during that period the growth and development of the organism and the level of its functional possibilities and capacity for work largely depend on it.

The alternation of various kinds of activity and rest is a major way to raise intellectual capacity. In public education this principle is the basis for drawing up curricula. In alternating lessons public education experts proceed from the premise that there are difficult subjects (mathematics, foreign languages, physics, chemistry, etc.) and easier ones (physical culture, singing, drawing, etc.). It is suggested that subjects be alternated in school timetables on this basis. It should be noted that physical culture lessons are often regarded only as a means of switching pupils from one kind of work to another, that is, as one of the afferent irritants of the central nervous system and stimulant of intellectual work. However, this is an incomplete evaluation of the significance of the influence of physical exercises and motor activity.

There is another interpretation of the physiological links between the motor and psychological functions. From it follows that physical fitness is an important condition for preserving a stable capacity for intellectual work for quite a long time. Such an approach is directly connected with examining the influence of physical training and sports on the schoolchildren's stable capacity for work.

At the 5th International Conference on Physical Education of Schoolchildren held in Rostov-on-Don in 1972, many Soviet and foreign experts noted that arbitrary (unorganised) motor activity of children and adolescents fluctuates, depending on age, sex and the season of the year. It can regulate itself and is within the limits envisaged by biological requirements in movement and the functional possibilities of the organism.

At that conference, some scientists spoke of a sharp drop in the motor activity of children in winter, as against summer (by 40 to 50 per cent), and even a change in that activity during the week.

According to our observations, the motor activity of schoolchildren diminishes with age: whereas it comprises about 17 per cent of study time for the 11 and 12 year-olds, it is 15 per cent for the 15 and 16 year-olds, while the average daily motor activity of the 17 year-olds is 19 per cent less (for boys) and 28 per cent less (for girls) than that of the 14 year-olds.

A comparative analysis of the data makes it possible to assume that the development of physical abilities and the state of health of schoolchildren depend on the level of motor activity at all its stages, from the lowest to the maximum.

A high level of this activity (16 to 20 hours a week) contributes to a most harmonious development of men (by anthropometric data). The maximum (more than 20 hours a week) level of motor activity can cause disharmony in the development of certain anthropometric and functional features.

Motor activity is a vital factor in man's life, but it has a favourable impact on the growing organism only within the bounds of optimum values. That is why the Scientific Institute of Children's and Adolescents' Hygiene under the USSR Ministry of Public Health suggests that the standard of motor activity should be based on the principle of correspondence of the level of that activity to the age requirements and functional possibilities of the organism, taking due account of essential distinctions between age groups.

For the hygienic standards of motor activity in the physical education of schoolchildren three systems are singled out that differ from one another, insofar as their requirements in movement and functional ability are concerned. These systems provide for different physical loads for the 8-11, 11-15 and 15-17 years brackets.

The second very important principle of setting the standards of motor activity is believed to be the optimum loads, that contribute to the strengthening of health and harmonious development of the growing organism. Only a definite (high) level of motor activity has a healthy influence on the organism of schoolchildren. Motor activity beyond the limits (hypodynamics or hyperdynamics) leads to pathological changes in the organism, disharmony in physical development, insufficient training of the organism or an overstrain of the cardio-vascular system.

Soviet and foreign researches into the influence of various physical loads on children and adolescents are broad and varied. The data of a comparative analysis of the state of health and capacity for intellectual work of schoolchildren, depending on the level of their motor activity, make it possible to conclude that a sound regime of the motor activity of schoolchildren makes for a more successful combination of studies and high sports achievements.

The department of theory and methodology of training athletes at the All-Union Research Institute of Physical Culture, on the basis of numerous experiments, has established that a good physical background, combined with high motor activity, contributes to better academic results of schoolchildren. Physical exercises, taking up only 15 to 20 per cent of the entire volume of studies, have a positive impact not only on the motor functions and the general state of health of schoolchildren but also on their academic progress.

Proceeding from an analysis of our investigations, a conclusion can be drawn that to date schoolchildren are insufficiently engaged in various physical activities. It can also be assumed that the curricula will be implemented at a higher qualitative level, if the regime of schoolchildren's motor activity is arranged better.

The study of connections between the indices characterising the development of the motor and psychological functions under different motor activity regimes will help to give a correct answer to the question as to how to improve schools' curricula: by cutting the time for regular subjects or by changing the volume and character of motor activity in school.

The interconnections between the definite volume and character (intensity) of physical exercises exert a tangible influence on the development of the motor function, and following that, on other aspects of a schoolchild's personality.

Soviet specialists continue to elaborate scientific criteria of physical perfection as an attribute of a harmoniously developed individual and specify concrete directions, essence and principles of physical education at all basic stages in the development of an individual, thus making a contribution to the common cause of building a new society.

NOTE

[1] K. Marx, F. Engels, *Works*, Berlin, 1973, Vol. 16, p. 195.

SCIENTIFIC LIFE

COUNTRIES AND PEOPLES

The present epoch, marked by the consolidation of the forces of peace and socialism, accelerated social progress and the unfolding of the scientific and technological revolution, witnesses an unprecedented expansion of contacts among nations and their desire to know each other better. In particular, there is a growing interest among Soviet people in the life of other countries and peoples, an interest which is greatly promoted by the high educational and cultural standards of all strata of the USSR's population.

Many popular geographic and ethnographic books have been brought out in the USSR. However, they were published at different times, described different countries from different points of view and with different degrees of thoroughness, but many countries and peoples were not described at all.

The twenty-volume illustrated edition of *Countries and Peoples* is an attempt by the Mysl Publishers in Moscow to bridge the gap. The publication follows a single plan and embraces the entire modern world, geographically and ethnographically.

The aim of its team of authors is to cover problems connected with the nature, history, politics, ethnography, demography, economics and culture of the planet as a whole and of each continent, major region and individual country, and thus provide the reader with the information he seeks on the subject.

The first, introductory, volume appeared in 1978. It is entitled *The Earth and Mankind. A General Survey.* It tells, from the point of view of Soviet science, about the nature, history, economies and culture of the peoples of the earth as a whole and helps to objectively determine the place of each country, region or continent on our planet.

The volume consists of five main parts preceded by an address "To the Reader" outlining the purpose of the publication and its structure and listing the research institutions most actively involved in preparing it.

Part One, "The Earth—Man's Habitat", deals with such questions as the earth as a planet; the geographical mantle; the geographical belts and zones of the planet, and anthropogenic environment changes.

Part Two—"The Origin of Man and the Settlement of the Earth"—tells about the initial stages in the emergence of man and races, about the historical and geographical peculiarities of the settlement and exploration of our planet.

The present-day settlement of the earth is dealt with in Part Three. It discusses, among other things, the size and structure of the population, the geography of the population, the ethnic (national composition of the population), gives an ethnographical survey of the world. A special chapter is devoted to the present-day geography of religions.

Part Four—"Geography of the World Economy"—contains reviews of industry, agriculture and transport preceded by a chapter entitled "The Scientific and Technological Revolution and the World Economy."

Of undoubted interest is the last, fifth, part—"The Cultural Diversity and Cultural Unity of Mankind"—which has the following chapters: "Man, Society, Culture", "Traditional Cultures of the Peoples of the World", "Modern Geography of Culture", and "The Dynamism of Modern Culture".

The volume closes with the chapter "Conclusion" summarising the material contained in it and throwing a bridge, so to speak, across to other volumes.

The "Annexes" contain a wealth of statistical and other information on all the major problems dealt with in the volume.

The year 1979 saw the appearance of the following volumes: *Asia Beyond the Soviet Borders. General Survey. Southwest Asia; Asia. Beyond the Soviet Borders. Southeast Asia; Africa. West and Central Africa; Europe Beyond Soviet Borders. Western Europe; Europe Beyond Soviet Borders. Eastern Europe.*

The following volumes are being prepared for print: *Europe Beyond Soviet Borders. General Survey. Northern Europe; Europe Beyond Soviet Borders. Southern Europe; Asia Beyond Soviet Borders. South Asia; Asia Beyond Soviet Borders. East and Central Asia; Africa. General Survey. North Africa; Africa. East and Southern Africa; America. General Survey. North America; General Survey of Latin America. Central America; America. South America; Australia and Oceania. Antarctica; The Soviet Union. General Survey. The Russian Federation; The Soviet Union. The Baltic Republics. Byelorussia, The Ukraine, Moldavia; The Soviet Union. The Transcaucasian Republics. The Central Asian Republics. Kazakhstan.*

The closing volume of the edition—"The Earth and Mankind. Global Problems"—will, as it were, have something in common with the first one, but it will discuss the global problems facing mankind and reflect the changes which will inevitably have come to pass on our planet in the years since the appearance of the first volume.

More than 250 geographers, ethnographers, historians, economists and journalists are taking part in the preparation of this publication to be issued on the basis of the cooperation of many institutions of the USSR Academy of Sciences and primarily of the Institute of Geography and the Institute of Ethnography.

We hope that this first all-embracing description of the world which combines scholarship with lucid writing will be welcomed by both Soviet and foreign readers.

All the volumes are richly illustrated and supplied with colourful maps, diagrams and drawings.

Academician **Yu. Bromley,**
Chairman of the Editorial Board
of the multi-volume publication
Countries and Peoples

INTERNATIONAL INFORMATION CENTRE OF BALKAN STUDIES

The great contribution of the Balkan peoples to world civilisation is well known. Interest in the socio-economic, political and cultural history of these peoples and in their present life is growing. Accordingly, the need of scholars in various countries to have more information about the sources on the region's history is becoming more pressing.

On Bulgarian initiative, the 18th General Conference of UNESCO adopted a resolution on the setting up of an International Centre of Information on the Sources on Balkan History (CIBAL).

At a conference in Sofia in September 1976, experts from Austria, Britain, Bulgaria, France, Federal Republic of Germany, Greece, Hungary, Italy, Poland, Rumania, Spain, Tunisia, the USA and the USSR, as well as representatives of the International Association of South-East European Studies (IASEES) and the International Council on Archives (ICA) worked out the statute of CIBAL, defined its structure and elected its leading bodies. G. Kourmoutos (Greece) was elected CIBAL President and N. Todorov (Bulgaria) its General Secretary.

At present, CIBAL incorporates representatives of 20 countries and three international organisations; its headquarters are in Sofia. The Centre organises its work in close cooperation with the Bulgarian Academy of Sciences.

CIBAL's principal tasks are as follows: to contribute to the studies of the Balkan peoples' history and their international ties (in particular, their relations with the Mediterranean countries) and the dissemination of information about the results of these studies, as well as the finding and investigation of relevant documentary materials in archives, libraries, etc., in various countries. With this aim work is being conducted on microfilming, scientific description, publication of materials and preparation of bibliographic reference manuals (in collaboration with the International Federation of Library Associations). Organisation of a system of information requires stimulating and developing inderdisciplinary ties of scientists. CIBAL plans to organise seminars of paleographers, archaeographers, and archivists with a view to studying mediaeval monuments in Slavonic, Greek, Latin, and also in Oriental languages.

The plans and results of the activity of CIBAL as a whole and its four commissions (on archives and microfilming; on manuscripts; on publications; on organisation of conferences, colloquiums and seminars) are discussed at enlarged sessions of the CIBAL Bureau. Detailed information about these sessions, the Centre activity and its publications is regularly given in the information bulletin published in Sofia in French and English, and since the end of 1978, in Bulgarian.

The CIBAL Commission on archives and microfilming (Chairman, I. Borsa, Hungary) has held several meetings to discuss plans of work and the first concrete results of the Commission's activity. A questionnaire has been compiled about documents on the history of Balkan countries; part of these materials has been microfilmed. A reference book *Balcanica* is being prepared, on the basis of documents available in several countries. Methodology has been worked out on a system of information and the making of microfilms.

A group of scholars under Ch. Gut (France) is preparing a description and publication of reports by French consuls in Balkan countries in the 18th century; an inventory of correspondence from Durazzo in the first quarter of the 18th century has been published. Work is being conducted on revealing and summing up demographic data (for the Plovdiv sanjak in the 19th century), and also on toponymic information pertaining to the Balkan Peninsula.

In January 1979, the CIBAL Commission on manuscripts held a session in Sofia. The Commission Chairman, S. Schmidt (USSR) delivered a report on the character of its work and the tasks before it in discovering and taking stock of manuscripts, compilation of short catalogues of manuscripts, more detailed descriptions (according to countries, depositories, subjects, varieties of monuments, etc.), and preparation of bibliographic publications. A draft of an international summary *Short Catalogue of Narrative (Descriptive) Monuments of the History and Culture of Balkan Countries (up to XV century inclusive)* was thoroughly discussed. The main provisions of the report based on the experience of the work conducted by the Archaeographic Commission of the USSR Academy of Sciences on compiling a *Summary Catalogue of Manuscripts in the USSR (up to XV century inclusive)* received due recognition of the session participants in Sofia. The methodology of Soviet archaeographers was adopted as the basis in the work on compiling an international catalogue of manuscripts on the history and culture of Balkan peoples.

A working group under W. Veder (the Netherlands) has been established to elaborate more detailed rules for describing manuscripts, ascertaining the relationship of its standards with an instruction compiled earlier at the Institute of Research and History of Texts in France, providing conditions for the use of computers, and defining translation of principal terms into various languages. It was decided to prepare a preliminary list of parchment manuscripts up to the mid-14th century (work to be supervised by B. Velcheva, Bulgaria) and a list of Glagolitic monuments (head—A. Nasor, Yugoslavia).

The Commission also recommended to continue compilation of detailed descriptions of all Slavo-Russian manuscripts in individual European countries. This work is already under way in Austria, Poland and some other countries. It is planned to complement the *Reference Book of Printed Descriptions of Slavo-Russian Manuscripts* published in the USSR in 1968, with the latest data about foreign works in this field (work to be headed by M. Capaldo, Italy), and to compile a reference book of all descriptions of Glagolitic manuscripts (head—A. Nasor).

The Chairman of the Archaeographic Commission of the Bulgarian Academy of Sciences, I. Duichev, and members of the Bureau of this Commission informed the participants at the Sofia meeting of the manyfold activity of Bulgarian scholars in describing, studying and publishing manuscripts and compiling reference-albums of filigree, handwritings, etc. A. Jurova told the meet-

ing about international exhibitions of old Bulgarian manuscripts. It is assumed that Bulgarian archaeographers will consult CIBAL in its work of describing ancient manuscripts.

The Commission meeting was attended by distinguished specialists in description, study and publication of mediaeval written monuments. The meeting turned into a virtual scientific conference. Along with concrete proposals directly connected with the works planned by CIBAL and practical recommendations on ways and time of their implementation, certain general principles and methods of description and bibliography of manuscripts were also discussed. Although a majority of the participants were specialists on Slavo-Russian manuscripts, there was an exchange of opinion on studying monuments in various languages. E. Vranussi (Greece) described the work of scholars of Byzantium studying monuments in Greek; E. Tenishev (USSR) familiarised his foreign colleagues with some work by Soviet scholars of the Orient. W. Vodoff (France) told the meeting about the system of describing Latin manuscripts.

The first years of the CIBAL work have shown that this Centre can, and already begun to play an important role in expanding scientific contacts between scholars of various countries; introducing new, valuable information about cultural monuments in South-East Europe into scientific circulation, and popularising promising methods of scientific description and study of the written monuments.

S. Schmidt
Chairman
of the Archaeographic Commission,
USSR Academy of Sciences

Congresses • Conferences • Symposiums

THE SCIENTIFIC AND TECHNOLOGICAL REVOLUTION AND THE AGGRAVATION OF THE CONTRADICTIONS OF CAPITALISM TODAY

In May 1979, Moscow was the venue of an international theoretical conference "The Scientific and Technological Revolution and the Aggravation of Capitalism's Economic and Social Contradictions at the Present Stage" sponsored by the Institute of the World Economy and International Relations, USSR Academy of Sciences.

The Conference was attended by eminent Soviet scholars from the Academy of Social Sciences under the CPSU Central Committee, from institutes of the USSR Academy of Sciences, and from universities, as well as by more than 100 scholars from 32 countries, including Bulgaria, Czechoslovakia, the GDR, Hungary, Mongolia, Poland, Rumania and Vietnam, and also representatives of the Communist and Workers' Parties from many capitalist and developing countries participated in the conference.

Academician Boris Ponomaryov, Alternate Member of the Politburo and Secretary of the Central Committee of the CPSU, made the opening address. He noted the practical significance and timeliness of the questions proposed for discussion, analysed the basic content of the scientific and techological revolution and the main trends of its impact on the economy, social relations and on the policy of imperialism, stressing that it is on the basis of the scientific and technological revolution that some fundamentally new phenomena appeared and developed in the economy of capitalism, which considerably aggravated its position and existing contradictions. Such a situation engendered the crisis of imperialism's economic policy; bourgeois economic thought reached a deadlock.

Academician Ponomaryov drew attention to the fact that the so-called multinationals which serve as an additional factor of the aggravation of crisis processes, are increasingly becoming the main "vehicle" of the scientific and technological potential of capitalism; and cited concrete examples showing the role of the multinationals in the sharp crises in the monetary sphere, in international production and trade relations.

Academician Ponomaryov em-

phasised that the scientific and technological revolution has a direct impact on the growing socio-class polarisation of capitalist society, on the intensification of the exploitation of the working class and all working people, the worsening of their socio-economic conditions, and that it causes new social antagonisms while the old ones grow more acute. Under the scientific and technological revolution the character and forms of the struggle between labour and capital change substantially on both national and international levels.

The basis for discussion was provided by the Theses worked out by the Institute of the World Economy and International Relations. They contained an in-depth analysis of the scientific and technological revolution, its essence and laws, its impact on the economic contradictions of state-monopoly capital, on the aggravation of the social antagonisms and contradictions of the world capitalist economy. The Theses note that in the present epoch, the scientific and technological revolution is developing in the conditions when capitalism exists as a world system and the world capitalist economy is headed by several competing and highly developed imperialist powers. This is inevitably fraught with the threat that they will exploit the various possibilities emerging in the socio-economic sphere against the vital interests of society.

Imperialism is historically responsible for the fact that the achievements of the scientific and technological revolution have spread to the military sphere and become the material basis of the military-technical revolution. The development, continuous perfection and stockpiling of nuclear weapons and other means of mass destruction unprecedented in capacity have radically changed the material and technical essence of wars, confronting mankind with the ominous spectre of a world thermonuclear war with its catastrophic consequences. It is from this point of view that the Theses regard the struggle to avert a new world war. The Theses note the untenability of bourgeois political economy's interpretation of the problems of scientific and technological progress and show the real prospects for using science and technology in the interests of humanity with due account of the social forces opposing the policy pursued by the monopolies.

The range of questions outlined in the Theses and the subjects of the papers determined the structure of the conference. It proceeded in plenary sessions and three panels: "The Scientific and Technological Revolution and the Problems of Reproduction", "The Scientific and Technological Revolution and the Aggravation of the Social and Economic Contradictions of Capitalism", and "The Scientific and Technological Revolution and the Aggravation of the Global Problems of the Development of Mankind".

The main paper at the plenary session was read by Academician Nikolai Inozemtsev, Director of the Institute of the World Economy and International Relations. He touched upon four groups of problems: the connection between the current scientific and technological revolution and social revolutions; the impact of the scientific and technological revolution on the internal processes in capitalist countries; the correlation between the aggravation of capitalism's contradictions and the development of the scientific and technological revolution, and economic growth in capitalist countries; the forces that oppose the reactionary and aggressive aspirations of the monopolies and come out for genuine progress, for the use of science and technology in the interests of mankind, and the tasks facing these forces in connection with the development of the scientific and technological revolution.

Drawing upon the forecasts of the main trends and development rates of the world capitalist economy for 1990-2000 made by the Institute of the World Economy and International Relations (within the framework of the Comprehensive Programme of Scientific and Technical Progress and Its Socio-Economic Consequences for the Period up to 2000, which is being implemented by the USSR Academy of Sciences and the USSR State Committee for Science and Technology), Academician Inozemtsev stated that there are all grounds to believe that the coming decades will see, not a slowing down of the scientific and technological revolution but its acceleration. The emphasis will be on the introduction of energy- and material-saving machinery and technology, as a result of which by the mid-1980s already, considerable structural changes will have been made in the economies of the USA and other highly advanced capitalist countries: the share of the extracting industries and metallurgy will be reduced while that of power engineering, chemistry and mechanical engineering will increase.

In the next decade, like in the previous one, the law of uneven development will manifest itself in full measure, which will lead to further changes in the correlation of the national economic indices of the USA, Western Europe and Japan. By 2000, industrial production in Western Europe will reach 120 per cent and in Japan 47 per cent of that of the United States (the figures for 1977 were 95 and 27 per cent respectively).

It is very likely that the share of the developing countries in the industrial production of the non-socialist world, will increase substantially—approximately up to 25-28 per cent by 2000 (14.7 per cent in 1977); their share in power production may increase up to 55 or even 60 per cent and in oil production, up to 80 per cent. At the same time, the gap between the developed and developing countries in production efficiency and per capita consumption will widen. Differentiation among the developing countries themselves will become deeper: in a number of indices some of them will approach the countries of middle development and centres of "subimperialism" may appear in the developing world.

Academician Inozemtsev stressed that the struggle of the developing countries for the opportunities offered by the scientific and technological revolution to be constructively utilised was closely linked with the struggle against imperialism and neocolonialism, for genuine independence and sovereignty, for deep-going progressive economic and social changes.

The scientific and technological revolution has aggravated a number of global problems whose solution calls for joint efforts. In conclusion Academician Inozemtsev said that the prevention of a

new world war and the curbing of the arms race are indispensable conditions for solving any of these problems.

The plenary session also heard papers, presented by S. Andriani (Italy), O. Bykov (USSR), H. Cholaj (Poland), Dào Văn Tâp (Vietnam), M. Daskalov (Bulgaria), J.-Ch. Dubart and B. Marx (France), G. Farakos (Greece), J. Fuchs (Argentina), Y. Fukuda (Japan), J. Nagels (Belgium), J. Nilas (Hungary), T. Postolache (Rumania), B. Ramelson (Britain), O. Reinhold (GDR), R. Richta (Czechoslovakia), T. Timofeyev (USSR), and E. Triana (Spain). The speakers gave much attention to analysis of the Theses and described the specific manifestations of the scientific and technological revolution in their respective countries.

In all, the conference heard more than 100 papers and communications.

Summing up the results of the conference at the final plenary session, Academician Inozemtsev noted that the speakers expressed common or very similar points of view on all major issues, such as the paramount importance of the scientific and technological revolution for the development of the productive forces and expansion of the international division of labour; the indissoluble connection between the scientific and technological progress and the global processes of the social and political restructuring of society; the transformation of science and technology into a very important sphere of struggle, of competition and cooperation between the two economic systems, and on many other major issues.

At the same time, different points of view were expressed, and different shades of assessment of certain facts and phenomena, such as the role of the various components in the essence of the scientific and technological revolution, correlation of its various aspects, prospects of its development in the coming decades, etc.

The conference was an important contribution to the study of the global problems of current economic, political and social development, was conducive to further theoretical elaboration of pressing problems of modern social science on the basis of Marxist-Leninist methodology and in the interests of international cooperation and social progress.

O. Ivanova

THE ROLE OF THE INTELLIGENTSIA IN SOVIET SOCIETY

An All-Union Scientific Conference "The Soviet Intelligentsia and Its Role in Building Communism" was held in June 1979 in Novosibirsk. It was sponsored by the USSR Academy of Sciences' Scientific Councils "Laws of the Development of the Social Relations and Spiritual Life of Socialist Society" and "The History of Socialist and Communist Construction in the USSR" and also by the Institute of History, Philosophy and Philology, Siberian Division, USSR Academy of Sciences; the Institute of Philosophy and the Institute of the History of the USSR, USSR Academy of Sciences, the All-Union "Znaniye" Society and the USSR Philosophical Society.

More than 330 scholars attended the Conference, their number including leading experts in scientific communism, philosophy, history, sociology, mainly in problems of the development of the Soviet intelligentsia, representatives of various branches of social sciences, Party and Government officials and higher school lecturers and university instructors from all the Union republics and from the country's scientific centres.

The conference discussed the important theoretical and practical problems reflected in the 13 collections of papers and communications by 314 scholars that had been distributed among the Conference participants in advance.

The Conference was opened by Academician A. Okladnikov, Director of the Institute of History, Philosophy and Philology, Siberian Division, USSR Academy of Sciences. A. Derevyanko, Corresponding Member of the USSR Academy of Sciences, and Secretary of the Novosibirsk Regional Committee of the CPSU welcomed the participants.

The main papers at the plenary session were read by Ts. Stepanyan, Corresponding Member of the USSR Academy of Sciences, and S. Fedyukin, D. Sc. (Hist.). In them they generalised (on the basis of published materials) and formulated the questions that became central during the discussions at the plenary sessions and in the panels.

In his paper Stepanyan substantiated the necessity of further elaborating such an important methodological problem as the definition of the concept of intelligentsia and its place in the socio-class structure of developed socialist society. He pointed out that similar features predominate over still existing distinctions in the social make-up of the working class, peasantry and intelligentsia within the socio-class structure of mature socialism. Another important problem Stepanyan highlighted, was the need for comprehensive studying of the Soviet intelligentsia's growing role in communist construction, in indissoluble unity with the leading role of the working class whom the intelligentsia is rendering ever greater assistance in its historic mission of building communism. He also emphasised the need to study the varied processes of the advance of the socio-class structure of mature socialist society towards communism and to analyse the oviet intelligentsia's role and place in ideological struggle.

Fedyukin singled out three sets of problems: the history of the emergence of the Soviet intelligentsia; the history of its activity—its contribution to socialist and communist construction; the history of the intelligentsia's spiritual life. Thirty scholars took part in the discussion that followed. It showed the community of views on such cardinal issues as the social, economic, political and ideological factors of the qualitative changes in the social nature and functions of the intelligentsia with the building and development of a socialist society in the USSR; the basic socio-class sources of the growth of its constructive influence on all spheres of social life; the nature of the changes in its structure, qualification and professional activity.

Unity of views was also expressed regarding the general characteristic of the social role of the socialist intelligentsia which is helping the working class as the leading force of socialist society in per-

forming its historic mission. It was noted that the qualitative difference between the Soviet intelligentsia and the bourgeois intelligentsia as also the deep sources of the growth of its role, can be understood only in combination of professional involvement in mental labour (specific feature of the intelligentsia in general) with the social (class in content and aims) function that this stratum performs; that until socially homogeneous communist society is established, the social essence and orientation of the people's intelligentsia's activity are determined by the socialist interests and communist ideals of society's leading force, the working class, which under socialism have become the interests and ideals of the entire Soviet people, including the intelligentsia.

Discussion also centered on the problem of clarification of the criteria for determining the place of the Soviet intelligentsia in the socio-class structure of mature socialist society, its social boundaries. In this connection such concepts as *mental* and *manual* labour, *direct* and *indirect* productive labour, *the character of labour, the product of labour* were analysed.

When analysing the intelligentsia's role and place in the social structure of developed socialist society attention focussed on the internal structure of the intelligentsia and its professional groups; the process of the drawing closer together of the intelligentsia with the working class and the collective farm peasantry and parallel with this the elimination of distinctions within the intelligentsia itself and the growth of its social homogeneity. It was suggested that the new qualitative factors be studied within the framework of the social base of developed socialist society, the alliance of workers, peasants and intellectuals. Attention was drawn to the guiding role of the CPSU in moulding the intelligentsia, including its national detachments, whose role was noted in raising the cultural and educational standards of the peoples of the multinational Soviet Union and in their mastering the Russian language as the language of their social communication. The need was stressed to continue the study of the personality of the intellectual as a subject of social production; of investigating in this connection such a phenomenon as the *intellectual potential of society;* the functions, role and make-up of the intelligentsia (qualitative and quantitative characteristics); the internal changes in the composition of the intelligentsia caused by the scientific and technological revolution; the efficiency of training intellectuals; the basic functions of specific social production groups; the mechanism of the shaping of social homogeneity. It was also emphasised that the study of the development of the Soviet intelligentsia should be carried out in close connection with the existing problems of communist construction and processes under way in the life of society so that the basic contradictions could be revealed and resolved. Any theoretical analysis in this field should be based on a study of the concrete problems of the Soviet intelligentsia's development.

There were three panels: "Methodological Problems in the Study of the Role and Place of the Soviet Intelligentsia Under Developed Socialism", "The Role of the Multinational Socialist Intelligentsia in the Development of the Soviet People's Political and Spiritual Culture", and "The History of the Soviet Intelligentsia." Sixty-four scholars addressed the panels.

The Conference helped to clarify the position of researchers on a number of cardinal issues reflecting the activity of the socialist intelligentsia in Soviet society.

L. Baranova

CHRONICLE

* *Sessions of the Soviet-Hungarian Commission on Cooperation in Social Sciences* were held alternately in Dushanbe, Frunze and Tashkent, capitals of the Soviet Central Asian republics. Academician P. Fedoseyev, Vice-President of the USSR Academy of Sciences, and Academician Z. P. Pach, Vice-President of the Hungarian Academy of Sciences, headed the Soviet and Hungarian delegations respectively.

In Dushanbe, at the session devoted to "The Urgent Methodological Problems of Social Sciences" reports were made by J. Lukács, Director of the Institute of Philosophy of the Hungarian Academy of Sciences and by L. Buyeva, Deputy Director of the Institute of Philosophy of the USSR Academy of Sciences.

In Frunze, the participants in the session discussed the progress in realisation of the Comprehensive Thematic Plan of Soviet-Hungarian Cooperation in Social Sciences for 1976-1980, and the preliminary plan for 1981-1985.

In Tashkent, the theme of the session was "The Internationalist Cooperation of the Soviet and Hungarian Peoples: History and Our Time" devoted to the 60th anniversary of the Hungarian Soviet Republic. Fifteen reports and communications were made by Soviet and Hungarian scholars.

Broad participation of the Tajik, Kirghiz and Uzbek scholars in the sessions resulted in a closer cooperation of social scientists of the countries of the socialist community.

* Minsk was the venue of a *jubilee session of the Byelorussian Academy of Sciences held to mark its 50th anniversary.* Corresponding Member of the USSR Academy of Sciences N. Borisevich, President of the Academy, delivered a summary report. The Academy was awarded the Order of Lenin. The audience was greeted by Alternate Member of the Political Bureau of the CC CPSU, First Secretary of the Central Committee of the Byelorussian Communist Party P. Masherov who presented the award.

* *The first session of the Scientific Council for Peace and Disarmament Studies* established by the Presidium of the USSR AS, the Collegium of the USSR State Committee for Science and Technology, and the Presidium of the Soviet Peace Committee was held in Mos-

This review covers the events of May-July 1979.

cow. The session was opened by Academician P. Fedoseyev, Vice-President of the USSR Academy of Sciences.

The Scientific Council's Chairman, Academician N. Inozemtsev, Director of the Institute of the World Economy and International Relations of the USSR AS, informed the audience on the Council's plans for future activities. The Council, he said, should become a centre for scientific and social thought in the field of peace and disarmament, carry out a comprehensive research into pressing problems of international life and promote the implementation of effective measures to curb the arms race. The Council plans provide for extensive publication of its papers, including the *Scientific Studies of Peace and Disarmament Problems* annual.

Academicians G. Arbatov, J. Gvishiani, M. Markov, E. Primakov and O. Bykov, D. Sc. (Hist.), were appointed heads of the Council's sections.

* *A Central Council of Methodological Seminars* was set up by the Presidium of the USSR AS. Academician Yu. Ovchinnikov, Vice-President of the USSR AS, was appointed chairman. Scholars participating in these seminars discuss philosophical and methodological problems of the natural, social and technical sciences. The Council is to render scientific and organisational assistance to methodological seminars in academic research institutions, establishments of higher learning, ministries and other government offices; to analyse, summarise and popularise the work of methodological seminars; to elaborate and recommend themes for research work, etc. The Council will closely cooperate with methodological councils of the USSR Academy of Medical Sciences, the USSR Academy of Pedagogical Sciences, academies of Union republics, the Ministry of Higher and Specialised Secondary Education, the Philosophical Society of the USSR and the "Znaniye" Society (a national society for disseminating knowledge).

* * *

* *A theoretical conference on "Lenin's Heritage and the Progress of Contemporary Natural Science"* was held in Moscow to commemorate the 70th anniversary of Lenin's *Materialism and Empirio-Criticism* and the 50th anniversary of his *Philosophical Notebooks.* It was sponsored by the Scientific Council for the Complex Problem "Philosophical Questions of the Contemporary Natural Science", the Central Council of Methodological Seminars of the USSR Academy of Sciences, the Institute of Philosophy of the USSR AS, and the Philosophical Society of the USSR.

The opening speech was made by S. Mikulinsky, Corresponding Member of the USSR AS. Then the following papers were presented: "The Interaction of Ideology and Science at the Present Stage" (P. Fedoseyev); "Scientific Activity and Social Responsibility of the Soviet Scholar" (R. Yanovsky); "Materialist Dialectics and the Interaction of Social, Natural and Technical Sciences" (B. Kedrov); "Lenin's Philosophical Heritage and the Methodology of Systems Research" (J. Gvishiani); "Fundamental Problems of the Nature of Matter" (M. Markov); "Einstein's Theory of Relativity, and Dialectics" (M. Omelyanovsky); "Dialectics of Cognition of the Universe" (V. Ambartsumyan, V. Kazyutinsky); "Space Research and the Urgent Problems of the Scientific and Technological Revolution" (R. Sagdeyev); "The Problem of Reductionism in Modern Biology" (A. Bayev); "On Dialectics and Ethics of Biological Knowledge" (I. Frolov); "Materialist Dialectics in the System of Modern Scientific Knowledge" (B. Ukraintsev); "The Problem of Social Development and Ideological Struggle" (V. Semyonov); "Lenin's Conception of Inexhaustibility of Matter, and the Microcosm" (V. Gott); "Philosophical Problems of Theoretico-Probabilistic Methods of Research" (Yu. Sachkov); "The Development of Fundamental Concepts in Modern Physics" (Ya. Smorodinsky); "The Present Concepts of Elementary Particles' Structure in the Light of Lenin's Ideas of the Structure of Matter" (V. Fainberg); "Lenin's Theory of Reflection and the Present-Day Problems of the Theory of Higher Nervous Activity" (E. Asratyan); "Dialectics and the Development of the Science of the Brain" (O. Adrianov, V. Chekurin).

* Taking part in the *conference of the editors of philosophical and sociological journals of socialist countries* held in Dushanbe were representatives of Bulgaria, Czechoslovakia, the GDR, Hungary, Poland, Rumania and the USSR. They discussed some urgent problems of the social and scientific development which were focal at the 16th World Congress of Philosophy and the 9th World Congress of Sociology held in 1978 in Düsseldorf and Uppsala respectively. The key report on "Marxist-Leninist Philosophy and Topical Problems of Our Day" was delivered by V. Semyonov (USSR), Editor-in-Chief of the journal *Voprosy filosofii* (Problems of Philosophy).

* *An All-Union theoretical seminar on "Culture and Science"* held in Rostov-on-Don (USSR) was sponsored by the North Caucasian Higher School Scientific Centre. The main report was made by M. Mamardashvili. Submitted were the following papers: "The Scientific and Technological Revolution, and 'Rationalisation' of Activities" (V. Davidovich); "Sociological Approach in the Study of Science" (E. Mirskaya); "Intellectual Revolution in the 17th Century" (M. Petrov). More than 30 scholars from Moscow, Leningrad, Sverdlovsk, Vilnius and other Soviet cities participated in the seminar.

* *An international scientific conference on "Modern Slavic Cultures: Their Development, Interaction, International Context"* was held in Kiev sposored by the Ukrainian Academy of Sciences, the Ukraine Commission for UNESCO, the International Association for the Study and Propagation of Slav Cultures and the Committee for Realisation of UNESCO Project "Slavic Culture Studies".

About 200 scholars from 18 UNESCO members, including the European socialist countries, Austria, Canada, Denmark, France, the FRG, Italy, the UK and the USA, took part in the conference.

Submitted at the plenary session were the following papers: "Humanism and Culture in Modern World" (Yu. Lukin, USSR and A. Stoikov, Bulgaria); "Modern Artistic Cultures of Slavic Peoples.

Achievements and Prospects" (D. Markov and G. Nedoshivin, both USSR, and L. Novichenko, Ukrainian SSR); "On the Methodology of Investigation of Problems of Culture" (J. Szczepanski, Poland); "Connections and Interactions of Modern Slavic Cultures" (G. Verves, Ukrainian SSR); and "The Role of Mass Media in Cultural Interchange of Slavic and Non-Slavic Peoples" (Ya. Zasursky, USSR).

Then the work proceeded in three panels: "General Problems of Development of Modern Slavic Cultures", "Modern Artistic Culture of Slavic Peoples", "Language and Culture Problems of Literary Translation", and in the round-table discussion group on "The Role of Traditions and the Development of Modern Artistic Culture".

All in all, the participants heard 90 reports and communications, 41 speeches in discussions and 16 speeches at the round table.

* In Tbilisi, *an international symposium on "Byzantine Culture"* was sponsored jointly by the USSR Academy of Sciences, the Georgian Academy of Sciences, and the Tbilisi State University. Participating in the symposium were more than 70 scholars from Austria, Bulgaria, Czechoslovakia, France, the GDR, Rumania, the USA and the USSR, including President of the International Association of Byzantian Studies, President of the Austrian Academy of Sciences H. Hunger, and Vice-Presidents of the IABS—Academician D.Angelov (Bulgaria), Professor H. Ahrweiler (France) and Corresponding Member of the USSR AS Z. Udaltsova.

At the plenary and panel sessions 58 reports were read which dealt, in addition to little-explored questions of a specific nature, with major theoretical problems of Byzantine culture, social thought, ideology and literature. In the course of lively debates, the participants discussed the cardinal aspects of cultural development of Byzantium, the Caucasian peoples, Ancient Rus and Slavonic countries. They concentrated on the problems of typology of Byzantine culture, the general laws and specific features of its development in neighbouring countries. The closing plenary session was devoted to a review of political relations between Georgia and Byzantium and their ties in literature and art.

* Scholars from Bulgaria, the FRG, the GDR, Hungary, Poland, and the USSR took part in the *colloquium on "Dialectics of the Subjective and the Objective in History and Historical Knowledge"* held in Berlin. Correlation between sociological and historical laws, the so-called historical alternative, and the historiographical aspect of the debated problems were given prominence in the discussion. Soviet scholars submitted papers on "Dialectics of the Subjective and the Objective, and the Historical Experience of Real Socialism" (M. Igitkhanyan) and "Dialectics of the Subjective and the Objective, and the Problem of Historical Law" (E. Chernyak).

* *A meeting of the Commission of the Soviet and Czechoslovak Historians* was held in Yerevan. P. Tronko, Member of the Ukrainian AS, and J. Poulík, Member of the Czechoslovak AS, headed the Soviet and the Czechoslovak delegations respectively.

The participants reviewed three themes: the crisis of the socio-political system of capitalism in Central and South East Europe between the two world wars; the 60th anniversary of the Slovak Soviet Republic; the struggle for Soviet power in the Transcaucasus. The first theme was dealt with in eight reports (five Soviet and three Czechoslovak); the second theme, in five reports (two Soviet and three Czechoslovak); the third, in two reports (Soviet and Czechoslovak). The Commission's thematic plan for 1981-1985 was approved. Armenian scholars took an active part in the meeting.

* At the *colloquium of Soviet and Japanese historians* in Moscow, the Soviet delegation was headed by Academician E. Zhukov, and the Japanese delegation by Professor K. Takahashi.

The participants discussed two main subjects: "Methodology of World History" and "Place of the Russo-Japanese War in World History". The first was dealt with in reports "Some Problems of the Methodology of History" by E. Zhukov, "Methodology of World History in Japan, 1945-1979" by Y. Goro (Japan) and "Are the Spartan Helotes Slaves?" by H. Ota (Japan).

The second subject was treated in reports "Basic Problems of the Russo-Japanese War of 1904-1905 in Soviet Historiography" by I. Rostunov (USSR), "The Russo-Japanese War in World and Japanese History" by Sh. Ohe (Japan) and "The Russo-Japanese War in the Light of the Socio-Economic Development of Japan" by Y. Nozawa (Japan).

Taking part in the meeting were the Soviet historians I. Mints, A. Iskenderov, S. Tikhvinsky, Z. Udaltsova, M. Barg, V. Buganov, E. Golubtsova, A. Ignatiev, P. Topekha, A. Chubaryan, K. Sarkisov, E. Udaltsov, and the Japanese scholars T. Ito, S. Kuramochi, T. Saito, W. Fujimoto, A. Fujiwara, B. Eguchi.

* A *scientific session marking the centenary of the birth of Vyacheslav Volgin, an outstanding Soviet historian,* was held in Moscow. It was sponsored by the Division of History of the USSR AS, the Scientific Council for "The History of Historical Science" of the USSR AS and the Institute of the World History of the USSR AS.

An introductory speech was made by Academician E. Zhukov. Submitted were the papers: "Academician V. Volgin and Some Problems of World History" (A. Iskenderov); "The Scientific and Public Activities of Academician V. Volgin in the Period Before the October Revolution" (V. Dunayevsky); "On the History of Publication of V. Volgin's Monograph on Jean Meslier" (G. Kucherenko). I. Galkin and V. Dalin shared their recollections of Volgin with the audience.

* About 100 delegates representing the scientific community and public opinion of 30 countries—socialist, capitalist, and developing—and 11 international and nine national French organisations took part in an *international conference on "The Role of Multinational Corporations, and Strategies of Economic Development"* held in Paris.

The participants heard and discussed about 60 papers and communications at plenary sessions and in the three study and working

commissions: "Strategies of Neocolonialism", "Multinationals—the Main Instrument of Neocolonialism", and "New Strategies of Development". Soviet scholars submitted the following papers: "Neocolonialism at the Threshold of the Eighties" (K. Brutents and A. Veber); "New Phenomena in Neocolonialism" (M. Volkov); "Certain Features of Modern Neocolonialism" (V. Kollontai); "On a New Strategy of Development" (A. Elyanov).

The conference adopted a resolution denouncing the multinationals' policy towards developing countries, and an appeal calling upon the UNCTAD to take measures against Western monopolies' domination over developing countries.

* *A scientific session on "New Phenomena in the World Capitalist Economy, and Their International Significance"* was held in Budapest by the *Problem Commission for Multilateral Cooperation of the Academies of Sciences of Socialist Countries in Joint Research of Modern Capitalism.*

The session was attended by representatives of scientific centres of Bulgaria, Czechoslovakia, the GDR, Hungary, Poland, Rumania and the USSR. The main report was submitted by Hungarian scholars J. Nilas and T. Palankai. The principal theses of the co-report prepared by Rumanian scholars were expounded by G. Apostol.

The following problems were discussed: the major knots of contradictions in the international economic relations of capitalist countries; new trends in the expansionist policy of international monopolies, in concentration and centralisation of industrial and banking capital; the ways of international capitalist integration; inflation and unemployment today; prices and price-formation in the world capitalist market; the crisis of bourgeois economic thought; possibilities and limits of coordination and regulation of the development of the capitalist economy.

* *A session of the Problem Commission for Multilateral Cooperation of the Academies of Sciences of Socialist Countries on the theme "The Economies and Policies of Developing Countries"* was held in Warsaw. Participating were representatives of the Academies of Sciences of Bulgaria, Czechoslovakia, the GDR, Hungary, Poland, Rumania and the USSR. They reviewed the Commission's activities for 1974-1978, adopted the thematic plan of cooperation for 1981-1985 and examined the composite theme "The Internal and External Economic, Social and Political Factors in the Development of the Newly Independent Countries".

The main report was submitted by the Polish side and the co-report, by the Rumanian side of the Problem Commission. More than 20 delegates took part in the debates, the results of which were summed up by Academician E. Primakov (USSR), Chairman of the Problem Commission.

* *An international conference of socialist countries' economists* held in Alma Ata was attended by scholars from Bulgaria, Czechoslovakia, the GDR, Hungary, Poland and the USSR. They discussed topical aspects of the joint critical study of bourgeois, petty-bourgeois and revisionist views on the economy of developed socialism.

The Soviet side was represented by a group of experts from the

Institute of Economics of the USSR AS, the Central Economico-Mathematical Institute, the Institute of the World Economy and International Relations of the USSR AS, the Institute of Economics of the Kazakh AS, and the Institute of Economics and Law of the Georgian AS.

In the course of discussion, participants stressed the need for a detailed elaboration of the Marxist concept of "economic system" and a truly scientific criteria which, unlike the random and biased principles of the bourgeois comparative studies, would make it possible to objectively compare different economic systems.

* *An American-Soviet Economic Symposium on "Long-Term Structural Changes in the Soviet and American Economies"* was held in Mount Kisco, Westchester. The Soviet delegation was led by Academician T. Khachaturov, the American delegation—by Professor L. Reynolds.

The Soviet scholars submitted the following papers: "Structural Changes in the USSR Economy" (T. Khachaturov); "Transformation of the Structure of Labour Resources in the USSR" (E. Kapustin); "Scientific and Technological Progress and Structural Changes in the USSR Economy" (A. Arakelyan); "National Wealth of the USSR: Its Structure, Dynamics and Place in the Balances of National Economy" (V. Bogachev); "Structural Changes in the USSR Industry" (E. Vasilevsky and A. Dynkin); "National Programmes in the Structure of Organisation of Economy in the USSR" (L. Evenko); "The Role of the Rural Sector in the Structure of the USSR Economy" (L. Nikiforov); "The Correlation of Capital and Consumer Goods Production in the Conditions of the Scientific and Technological Revolution" (L. Nochevkina).

Presented by American scholars were the papers: "The Distribution of Personal Income" (E. Budd); "Sources of Growth in the Real National Income of the US since 1929" (E. Denison); "Socio-Economic Implications of Recent Twists in Age Structure" (R. Easterlin); "Long-Term Structural Changes in the Labour Force" (W. Galenson); "Trends in Composition of Gross National Product by Major Sectors and Industry Groups" (J. Kendrick); "Personal Consumption Expenditures: Some Issues and Some Measures" (S. Lebergott); "Sources of Long-Term Changes in Wealth Ownership: Savings and Revaluations, 1947-1975" (R. Ruggles).

Following the termination of the symposium, Soviet participants had numerous meetings and talks with representatives of the US Administration, officials, businessmen and scholars in Washington, Atlanta, Chicago and New York.

* *A Scientific Conference devoted to the 50th anniversary of the first five-year plan for the economic development of the USSR and to the further improvement of planned management of the national economy* was held in Moscow. It was sponsored by the USSR State Planning Committee (Gosplan), the USSR Academy of Sciences, the Academy of Social Sciences under the CC CPSU, and the Academy of the National Economy of the USSR.

The main report was read by N. Baibakov, Deputy Chairman of the Council of Ministers of the

USSR, Chairman of Gosplan. Various aspects of planning were dealt with in the reports of Academician V. Kotelnikov, Vice-President of the USSR AS. V. Medvedev, Rector of the Academy of Social Sciences under CC CPSU, and Academician N. Melnikov, Rector of the Academy of the National Economy of the USSR.

The work of the conference was carried out in panels dealing with the major problems of planning. In particular, 14 reports and communications on the long-term planning of the scientific and technological progress were delivered in the panel chaired by Academician V. Kotelnikov.

* More than 100 prominent scholars from 39 countries (Bulgaria, the GDR, Poland, the USSR and Yugoslavia among them) attended the *29th Pugwash Conference on Science and World Affairs* in Mexico City.

The Soviet 11-member group included Academicians M. Markov, head of the delegation, and N. Enikolopov, Corresponding Members of the USSR AS V. Goldansky and V. Emelyanov.

Detente, the arms race, international security, socio-economic problems facing the developing countries and the energy crisis were on the agenda of the conference. The SALT-2 Treaty was in the centre of the participants' attention.

The Soviet scientist V. Emelyanov read a paper "Specific Problems of the Use of Atomic Energy".

* Representatives of scientific, public and religious circles of Austria, Canada, Czechoslovakia, the GDR, the FRG, Poland, Rumania, Spain, Sweden, the UK, the USA and the USSR attended the meeting on *"Pacific Coexistence and Ideological Controversy"* in Saltsjöbaden, near Stockholm. It was held within the framework of standing symposiums dealing with topical theoretical and political problems from positions of different world outlooks (including Marxism and Christianity).

The Soviet delegation included Professors N. Kovalsky and M. Mchedlov, and S. Gribkov, Secretary of the Soviet Peace Committee.

Highlighting the meeting were topical aspects of peaceful coexistence of states with different social systems, including problems relating to detente, the arms race, disarmament, human rights and universal peace.

Professor R. Weiler of Austria, Rt. Rev. I. Ström, Bishop of Stockholm, and I. Poël of Sweden made introductory speeches. The main reports on peaceful coexistence from the standpoint of different world-views were read by M. Mchedlov and H. Precht (FRG). Then discussions proceeded in two working groups: "Religion and Atheism: Their Role for Peace" and "The International Situation and Perspectives for Detente from Christian and Marxist Positions".

In their message to L. Brezhnev and J. Carter, the participants emphasised the international significance of the SALT-2 Treaty and expressed their hope that it would lay the foundation for the progress of mankind along the path of detente, the cessation of the arms race, the achievement of disarmament and universal peace.

* *An international seminar on "The Role of Public Opinion in the Support of the Struggle of the Peoples of Southern Africa Against Racism, Apartheid and Colonialism"* was held in Alma Ata under the auspices of the Soviet Afro-Asian Solidarity Committee and the Institute of Africa of the USSR AS jointly with the UN Special Committee Against Apartheid. More than 100 delegates of 28 national and eight international organisations attended. Taking part in the seminar were delegations from liberation movements of Southern Africa: African National Congress of South Africa headed by S. Sigxashe, Patriotic Front of Zimbabwe headed by J. Msika, Secretary-General of Zimbabwe African People's Union, and South West Africa People's Organisation headed by H. Hamutenya.

The seminar was opened by A. Dzasokhov, First Deputy Chairman of the Soviet Afro-Asian Solidarity Committee. Anatoli Gromyko, Director of the Institute of Africa of the USSR AS, made the introductory speech. A report on the activities of the UN Special Committee Against Apartheid was read by Dr. S. Zachmann, head of the Committee's delegation.

The participants heard about 50 papers, 15 Soviet among them, and discussed the results of the International Anti-Apartheid Year; urgent problems of international and national non-governmental organisations in their implementation of UN resolutions in support of the struggle of the peoples of Southern Africa; the tasks of mass media in giving the widest coverage to the struggle of the South African peoples and in counteracting racist propaganda; the prospects for further actions. In conclusion, the seminar adopted an appeal to Kurt Waldheim, UN Secretary-General, and also a message expressing solidarity with the liberation movements in Southern Africa.

* *A symposium on "Maoism and the National Question"* in Ulan Bator was sponsored by the Institute of Oriental Studies of the Mongolian Academy of Sciences. Sinologists from Bulgaria, Cuba, Czechoslovakia, the GDR, Hungary, Mongolia, Poland, the USSR and Vietnam attended.

Submitted were 25 papers and communications dealing with great-Han policy pursued by the Beijing leaders in the national minorities regions of China; the Maoist theory of a single Chinese nation; the policy of expansion and territorial claims against bordering countries.

Soviet scholars read the following papers: "Great-Han Doctrine of a Single Chinese Nation" (M. Sladkovsky); "Great-Power Chauvinism of the Chinese Leaders in the Questions of National and State Construction and in the Policy of National Autonomy" (L. Gudoshnikov); "Maoist Distortion of the Contemporary History of Sinkiang" (B. Gurevich); "On China's Policy in the National-Language Question (1970s)" (A. Moskalev); "Social Policy of the Chinese Leadership and Its Specifics in the Non-Chinese Regions. 1971-1976" (R. Neronov); "Historical and Ideological Roots of the Great-Han Chauvinism" (L. Perelomov).

* *A scientific conference on "Topical Aspects of the Struggle of the USSR for the Cessation of the Arms Race and the Prevention of a Nuclear World War"* was held at the Diplomatic Academy of the USSR Ministry of

Foreign Affairs in Moscow. Attending were Soviet experts on disarmament problems: research workers of the Diplomatic Academy, the Institute of the World Economy and International Relations, the Institute of US and Canadian Studies, the Institute of the Far East, and high-ranking officials from the USSR Ministry for Foreign Affairs.

* *A delegation of the American Bar Association visited the Soviet Union on the invitation of the Association of Soviet Lawyers.* The delegation consisted of T. Adamson, F. Baron, G. Bell (head), B. Landau, W. Spann and M. Wilkey. Meetings were held with prominent Soviet lawyers—researchers from Academic institutions and practitioners. They discussed the following topics: in Moscow, "The Role of Law and Legal Means in Developing Positive Relations between the USSR and the USA"; in Tashkent, "The Legal Protection of the Environment" and "Mother and Child Protection"; in Leningrad, "The Prevention of International Law Infringement".

* *An international round-table conference on "Different Aspects of Political Socialisation"* held in Katowice, under the auspices of the Polish Methodological Centre for Political Science Studies was attended by 40 scholars from Bulgaria, Czechoslovakia, the FRG, Hungary, the Netherlands, Poland, Rumania, Sweden, the USA and the USSR.

Participants discussed the problems of political education and political socialisation connected with the formation of political knowledge, political and legal culture of different classes and sections of society, especially the youth. The Soviet scholars, Corresponding Member of the Latvian AS V. Miller, Rector of the Latvian State University; V. Guliev and V. Kazimirchuk, Heads of Sectors of the USSR AS Institute of the State and Law, read papers on how legal culture influences the sociopolitical activity of Soviet citizens.

* More than 230 scholars from 28 countries, including Czechoslovakia, the GDR, Hungary, Mongolia, Poland, Rumania, the USSR and Yugoslavia, attended the *4th World Sanskrit Conference of the International Association for Sanskrit Studies* held in Weimar. It was sponsored by the Humboldt University of Berlin, jointly with the GDR Academy of Sciences.

The participants listened to nearly 150 reports. Soviet scholars presented over 20 papers, three of which—"The State and Society in Ancient India" (G. Bongard-Levin, IASS Vice-President), "Mahabharata and Potlatch" (Ya. Vasilkov) and "The Indian Classical Heritage as a Major Source of the Development of Indian Literature" (E. Chelyshev)—were read at plenary sessions. The main work of the conference proceeded in sections on history, linguistics, literature, archaeology and art, the impact of Indian culture on other countries and their interaction.

At the General Assembly of the IASS held within the framework of the conference, Professor R. Dandekar of India was elected President of the Association.

* *A meeting of the Problem Commission for Multilateral Scientific Cooperation of the Academies of Sciences of Socialist Countries on the Theme "General Laws of the Development of World Literature"* was held in Berlin. It was attended by scholars from Bulgaria, Czechoslovakia, the GDR, Hungary, Mongolia, Poland and the USSR who adopted the thematic plan of multilateral cooperation for 1981-1985.

The plan envisages the publication of collective works on problems of ideological and aesthetic evolution of humanist writers of the 20th century; American literature of the epoch of imperialism and the contemporary ideological struggle; baroque and romanticism—their essence and manifestations of the national traits in European literatures; the role of fiction in the building of developed socialism; realistic literature and the revolutionary movement in Latin America; ideological struggle and topical problems of the contemporary literary studies and aesthetics; specific features of the formation of national literatures of the peoples which bypassed the capitalist path of development; methodology of the comparative study of literatures.

* *A Soviet-Finnish symposium of Baltic-Finnish philology* held in Petrozavodsk, USSR, was sponsored by the Division of Literature and Language of the USSR AS and the Institute of History, Literature and Language of the Karelian Branch of the USSR AS. Key reports were read at the plenary session by the Soviet scholars M. Remmel, K. Chistov, and E. Karhu, and the Finnish scholars T. Itkonen, L. Honko, and V. Kaukonen. About 50 reports, including 17 by Finnish scholars, were delivered in the three panels on philology, folklore and literature.

* The Institute of Assyrology, University of Copenhagen, sponsored the *26th International Meeting of Assyrologists on "Death in Mesopotamia"*. Some 200 scholars from 19 countries, including the GDR, Hungary, the USSR and Yugoslavia, attended.

The participants heard and discussed 57 papers dealing with new archaeological investigations in the Middle East, as well as topical problems of anthropology, demography, philology, the history of religion and medicine. Soviet scholars presented the following papers: "The Formula Sag-aŝ sag-a-na in the Sumerian Mythology" (V. Afanasieva); "Life Expectancy According to Late Babylonian Texts" (M. Dandamayev); "Akkadian Philology in the Light of Afro-Asian Linguistics" (I. Dyakonov); "A Document Concerning the Death Cult of the 3rd Dynasty of Ur" (B. Perlov); "The Necropolis at the Urartian Town of Erebuni (Irpuni)" (S. Khodjash). The meeting was extremely helpful in elucidating many important aspects of the Mesopotamian civilisation.

* *An All-Union Scientific Conference on Ethiopian Studies* was held in Moscow by the USSR AS Scientific Council on African Problems and the USSR AS Institute of Africa. Taking part in the conference, besides Soviet scholars, were specialists from Bulgaria, Czechoslovakia, the GDR, Hungary, Poland, and African postgraduates studying in the USSR.

At the plenary session the following reports were delivered: "Soviet-Ethiopian Relations. Ethiopian Studies in the USSR", by Anatoli Gromyko, Chairman of the Scientific Council on African Problems and Director of the Institute of Africa; "Economic Problems

Facing Revolutionary-Democratic Ethiopia", by L. Goncharov; "Consolidation of Revolutionary Achievements in Ethiopia and the Experience of Countries of Socialist Orientation", by G. Starushenko; and "Reflections of Social Contradictions in Mediaeval Ge'ez Literature" by T. Tamrat, Director of the Institute of Ethiopian Studies of the Addis Ababa University.

At the three panel sessions—"Economic and Political Problems", "Historical and Socio-Economic Problems" and "Linguistics. Ethnography. Art"—the Soviet participants and guests from abroad submitted over 60 papers. The Ethiopian scholars B. Abbeber, N. Ayele, A. Eshete, G. Girmay and F. Zewdie also presented papers.

* *The 16th All-Union Conference on Finno-Ugric Studies* held in Syktyvkar, USSR, was sponsored by the USSR Academy of Sciences and the Institute of Language, Literature and History of the Komi Branch of the USSR AS.

The introductory speech at the plenary session was made by Z. Panev, Chairman of the Presidium of the Supreme Soviet of the Komi Autonomous Republic, and reports were read by A. Syutkin, Secretary of the Komi Regional Committee of the CPSU, on "The Leninist Nationalities Policy in Action"; by N. Rochev, on "Finno-Ugric Studies in Komi ASSR after the 11th All-Union Conference held in Syktyvkar in 1965"; by Yu. Yeliseyev and L. Terentyeva, on "The Results of Finno-Ugric Studies in the USSR for 1974-1979". Then work of the conference proceeded in panels on: grammar; lexicology and onomastics; phonetics, dialectology, interaction of languages and dialects; archaeology; ethnography and anthropology; folklore; literature. All in all, about 300 papers and communications were heard and discussed at panel sessions.

BOOK REVIEWS

В. И. Ленин, КПСС о Советской Конституции. М., Политиздат, 1979, 343 стр.

V. I. Lenin and the CPSU on the Soviet Constitution, Moscow, Politizdat Publishers, 1979, 343 pp.

The new Constitution of the USSR which has become a powerful motive force of Soviet society's further progress, rests on a sound theoretical and practical foundation, on the firm Leninist principles. It is a natural stage in Soviet constitutional development, preserving the continuity of the ideas and principles of all Soviet constitutions.

The collection under review gives the reader a comprehensive picture of the Leninist features of a constitution of the socialist type, of how they were evolved and upheld by Lenin and the CPSU, and of how the Party is developing them in the new historical conditions.

Constitutions of the socialist type are primarily generalisation of the experience of the masses in their struggle for revolutionary transformations, the formalisation of what has been achieved in that struggle.

Speaking about the first Soviet Constitution, Lenin pointed out that "it is not the invention of a commission, nor the creation of lawyers, nor is it copied from other constitutions. The world has never known such a constitution as ours. It embodies the workers' experience of struggle and organisation against the exploiters both at home and abroad" (V. I. Lenin, *Collected Works,* Moscow, Vol. 28, pp. 145-146).

Soviet constitutional development is inseparably linked with the main stages of the country's socialist development. The 1918 Constitution of the RSFSR was a result of the victory of the Great October Socialist Revolution, the establishment of the dictatorship of the proletariat in the form of a Soviet republic brought into being by the revolutionary experience of the masses.

The union of the peoples of the Soviet republics found expression in the 1924 Constitution of the USSR, while the 1936 Constitution formalised the victory of socialism in the USSR.

The constitution adopted in 1977 marks a new historical stage in the Soviet Union's advance towards communism—the building

of a mature socialist society and the development of the state of the dictatorship of the proletariat into a socialist state of the entire people.

Lenin's works and the documents of the CPSU included in the collection vividly show that the Soviet constitutions formalise the gains of the working people in their struggle for socialism and communism and are, therefore, the creation of the people themselves. This is conclusively evidenced by the fact that the Constitution of the RSFSR included the Declaration of the Rights of the Working and Exploited People which generalised the revolutionary demands of workers and peasants, that the 1924 Constitution of the USSR was based on the Declaration and Agreement on the Formation of the USSR which had been widely discussed in all the republics, that the draft Constitutions of 1936 and 1977 were discussed by the whole people.

The 1918 Constitution of the RSFSR also contained programme provisions stating that the task of the state of proletarian dictatorship was the abolition of exploitation and the building of a socialist society. The 1977 Constitution of the USSR outlines the country's prospects even more broadly. It illumines the people's path of the morrow and clearly defines the objectives and tasks for the future. That is why constitutions of the socialist type are not only legal acts but also important political and ideological documents.

The collection shows the leading position of the Communist Party in the Soviet state, reflects the enormous work it is carrying out to improve the political system of Soviet society and develop socialist democracy, constitutional norms and principles.

The new Constitution of the USSR expresses clearly and consistently the guiding role of the CPSU. It states that the Party is the leading and guiding force of Soviet society and the nucleus of its political system, of all government and public organisations. Without replacing them, the CPSU plays its leading and guiding role in complete accordance with the Fundamental Law. Leonid Brezhnev noted that when the Party became the ruling party it firmly stated at its 8th Congress, which was directed by Lenin, that it implemented its decisions "through the Soviet bodies, within the framework of the Soviet Constitution" (*Fundamental Law of the Socialist State of the Whole People*, Moscow, 1978, p. 44). The Party carries out its policy in state life primarily through Communists who have been elected by the people to the Soviets and who are working in state bodies.

The legislative confirmation of genuine sovereignty of the people, of democracy for the working people is the pivot of the socialist type of constitution. The materials and documents in the collection vividly bear this out. They show that all Soviet constitutions were stages in the consistent development of the fundamental principles of socialist democracy. The Constitution now in force is a great step forward along that path. The collection also includes extracts from Leonid Brezhnev's reports, speeches and statements showing how the Constitution was drawn up and discussed. The May (1977) Plenary Meeting of the CPSU Central Committee pointed out that the expansion and deepening of socialist democracy is the main direction of the new that the Constitution contains.

The Constitution of 1977 and its implementation show once again that socialist democracy is inseparable from socialist legality. Article 4 says: "The Soviet state and all its bodies function on the basis of socialist law, ensure the maintenance of law and order, and safeguard the interests of society and the rights and freedoms of citizens."

The book shows that the provisions of the Fundamental Law are being constantly developed and specified in other legal acts. As was noted already during its discussion, the adoption of the Constitution would require implementing broad measures to develop legislation. Today these measures, formulated in the Resolution of the Presidium of the USSR Supreme Soviet on bringing legislation into line with the Constitution of the USSR, are consistently translated into life.

The collection under review will help the reader not only to get a better idea of the main feature that distinguishes the socialist type of constitution but also to gain a clear idea of Lenin's and the CPSU's tireless work to generalise the revolutionary creative activity of the masses, to improve and develop Marxist-Leninist theory in general and the theory of the state and law in particular, and especially to embody Marxism-Leninism and the Party's programme tenets in the practice of state construction.

I. Samoshchenko

Н. Н. ИНОЗЕМЦЕВ. *Ленинский курс международной политики КПСС.* М., изд-во «Мысль», 1978, 205 стр.

N. N. INOZEMTSEV, *The Leninist Course in the CPSU International Policy*, Moscow, Mysl Publishers, 1978, 205 pp.

In his latest work Academician Inozemtsev concentrates on the historical period after the 25th Congress of the CPSU, on the foreign policy activities of the CPSU and the Soviet Government in implementing the Programme of further struggle for peace and international cooperation, and for the freedom and independence of the peoples, advanced by the Congress.

The author analyses the main lines of the Party's foreign policy strategy and shows its close connection with the fundamental principles of the foreign policy of socialism, laid down by Lenin. He explores the dynamics of the world revolutionary process, the cardinal changes in the correlation of forces in the world arena from the late 1960s through the 1970s, traces the development of the USSR's relations with the major groups of states: socialist, developing and capitalist, discusses concrete problems of implementing detente, of supplementing political detente with military detente, of expanding international economic cooperation.

From the objective connection between socialism's domestic and

foreign policies the author draws the basic principles of the foreign policy course of the CPSU and the Soviet State: the principle of proletarian, socialist internationalism and the principle of peaceful coexistence of states with different social systems.

A distinctive feature of the book is its strictly scientific argumentation. Inozemtsev upholds Lenin's concept of socialism's foreign policy, shows that proletarian internationalism has nothing in common with the forcible "prodding" of revolution, as the opponents of Marxism-Leninism allege.

The simultaneous operation in world politics of the main contradiction, that between socialism and capitalism, and of the foreign policy principle of peaceful coexistence of states with different social systems is a logically and historically substantiated characteristic feature of present-day international relations.

Today, as never before, the policy of peaceful coexistence is becoming an objective necessity for mankind. It is only by pursuing this policy that the threat to the very existence of modern society can be removed, that the growing interconnections and interdependence of countries and peoples, the deepening of the international division of labour can be used for the benefit of man, and that the global problems besetting mankind can be solved, this also requiring the joint efforts of states with different social systems. The author also stresses that peaceful coexistence does not at all mean a "freezing" of the social status quo, the artificial conservation of the revolutionary process.

At the present stage of world development when powerful means of mass destruction exist, safeguarding peace and averting a new war have become the main elements of the foreign policy of the CPSU.

The author notes that the victory of the socialist revolution in Russia and subsequently in a number of countries in Europe, Asia and Latin America led to a considerable acceleration of the historical process and to deep-going qualitative changes in international life. He examines at length the radical changes in the world economy and in the system of international relations, shows that the socialist community of countries is an example of a new type of relations, studies the emergence of the political unity of the fraternal parties and states and their allround economic cooperation. He comes to the important conclusions that the positions of the world socialist system are continuously becoming stronger, that the growth of the forces and possibilities of world socialism, and its increasing impact on the entire course of international events constitute the main tendency of world development.

Much attention is paid to the growing role of the developing countries in world politics. The author shows the process of the growth of their political activity in the international arena, as testified by the consolidation of the nonalignment movement, the work of the Organisation of African Unity and other organisations waging an anti-imperialist struggle, the increasing number of socialist-oriented countries, and the intensification of progressive trends in the developing countries.

One of the most significant and interesting parts of the book is the section which analyses the policy of peaceful coexistence in action, the process of normalisation of the international situation, the transition from the cold war to detente.

The author traces the history of the USSR's persistent efforts to transfer its bilateral relations with France, the FRG, the USA, Britain, Italy, Japan and some other countries to the platform of peaceful coexistence. He emphasises that the passage from the cold war to detente is not a single act but a long process which manifests itself with different degrees of intensity, at different times, in different regions and in relations between different countries. This process is strongly influenced by the active foreign policies of the USSR and other socialist countries, by their energetic initiatives aimed at consolidating the positive changes in the international situation, an effective rebuff to the opponents of detente.

Investigating the genesis of the foreign policy programmes adopted by the 24th and 25th CPSU Congresses and their implementation, Inozemtsev shows that they are scientifically substantiated and comprehensive and that all the spheres and trends of the USSR's struggle for peace are interdependent. Soviet foreign policy has always implied vigorous defence of the cause of peace and the principle of peaceful coexistence. The author concentrates on disarmament as the key issue of the day. The reader sees for himself that throughout the Soviet Union's existence and especially in the period since the Second World War the struggle to limit armaments and achieve disarmament has been uppermost in Soviet foreign policy.

The successes in relaxing international tensions achieved in the late 1960s and early 1970s and the accumulated positive experience in the relations of states with different social systems ensured the realisation of the proposals of the socialist countries to convene a European conference on security and cooperation in the continent. The book gives a detailed assessment of the significance of the conference, of its Final Act and the principles of relations between European states proclaimed in it.

The last section of the book is devoted to the USSR's efforts to develop multilateral economic cooperation. Rich in interesting information, it leads the reader to the conclusion that international economic cooperation creates conditions for political cooperation and for military detente.

Inozemtsev's monograph is an important contribution to the Marxist science of international relations and Soviet foreign policy. Generalising the experience gained by the Party and the Soviet Government in this sphere after the 25th Congress of the CPSU, the work offers an in-depth analysis of the complex processes of international affairs in the 1970s.

V. Trukhanovsky,
Corresponding Member,
USSR Academy of Sciences

Особенности процесса накопления в развитых капиталистических странах. М., изд-во «Наука», 1978, 439 стр.

Specific Features of the Process of Accumulation in Developed Capitalist Countries, Moscow, Nauka Publishers, 1978, 439 pp.

The monograph under review, written by a group of authors, is devoted to a wide range of problems connected with the accumulation of capital, which is the central link in the reproduction process. The seven chapters examine such problems as the unity of production and accumulation processes in the material and non-material spheres of the economy, the accumulation of the elements of productive capital, the dynamics of accumulation rate, the structure of investments, the specific features of the investment cycle, modern features of the accumulation of fixed capital, and technical improvement in the means of production. All chapters are distinguished by well-chosen facts, their profound analysis and substantiated calculations and figures. This comprehensive study of accumulation has three main trends, closely connected with each other: politico-economic, state and techno-economic.

On the basis of previous research and in its further advancement the authors criticise a simplified approach to the theme under investigation and formulate a number of premises of major theoretical importance. They write that the traditional division of the economy into the production and non-production spheres is incorrect economically and largely subjective. The authors are right in asserting that on the basis of such a view the social economy of our day is interpreted as a conglomeration of the types of labour which are not interdependent productionwise. They state that the current process of productive accumulation directly and closely connects three types of investment activity: investment in scientific research producing new knowledge; investment in material means of production, which represent a materialisation of scientific knowledge; investment in education which ensures the aggregate workforce the accumulation and development of knowledge necessary for the entire process of social reproduction.

The authors emphasise the imperative necessity of taking due account of the specificities of each sphere of production and the accumulation of capital and a concrete analysis of all circumstances influencing their interaction and the quantitative relationship between them. They write that there is no simple solution to the question of an optimum proportion of the goal-oriented distribution of capital investments, similar for any country and at any time. This distribution depends on the economic development level reached and the prospects of market demand, the presence of production resources and their comparative cost, as well as on a multitude of other factors.

As far as the state aspect is concerned, the work under review contains numerous, and rather substantial, comparisons of proportions of the two spheres of the economy and capital investments in them for various countries. The

percentage of the workforce employed in the non-material sphere is increasing everywhere, and the higher the general level of economic development, the more it grows. To ascertain the role of the two spheres in the accumulation of capital and their mutual influence, the authors make a quantitative analysis of the correlations of gross output and the final and intermediate demands of the material and non-material spheres—separately and by comparison.

Calculations and comparisons bring researchers to a number of important conclusions: having established the fact that in the process of production and accumulation the non-material sphere is ousting the material one and begins to take the leading position, they show that interaction of the two spheres and their impact on the process of accumulation are of a complex and contradictory nature. Apart from the fact that the non-material sphere itself swallows up an enormous portion of investments, the rapid development of such its parts as science and the elaboration of new technology, transport and communication, steps up the renewal of fixed capital of the material sphere at a higher technical basis and thus not only transforms the growing investments into fixed capital, but, as a rule, causes a raise in the share of investments in the gross national product.

Behind the average data illustrating the general trend of the growth of the relative and absolute size of capital accumulation stand multifaceted shifts in the structure of investments. A branch analysis of investments reveals a stable trend to the exceeding of the growth rate of investments in the non-material sphere. In turn, an analysis of technological structure leads to the conclusion that at least on a medium-range plane investment efficiency is higher in the case when the proportions of expenditures on the active and passive elements of fixed capital shift in favour of the active parts. Finally, an analysis of reproduction structure gives a picture of the growth of the economic role of the replacement fund.

Investigation of the interaction between the material and non-material spheres, the branch, reproduction and technological structures of investments would have been incomplete, had the authors not turned to the question of the correlation of the first and second subdivisions of the social product. The initial point of their theoretical approach indicates that there is no direct proportionality between the organic composition of capital and the efficiency of social production.

The work under review emphasises the importance of comparing the dynamics of the prices of new machinery with the dynamics of its productivity and usefulness, and substantiates the thesis that a better, more productive machine is not necessarily more expensive. The authors quote Marx who wrote that "science and technology give capital a power of expansion independent of the given magnitude of the capital actually functioning" (K. Marx, *Capital,* Vol. 1, Moscow, 1969, p. 567). And also that "the lower the cost of fixed capital compared with its efficiency, the greater it answers its purpose" (K. Marx and F. Engels, *Works,* Vol. 46, Part II, p. 253, in Russian).

Both as a theoretical analysis and an analysis of concrete reality the book appears to add to the arsenal of arguments directed against the dogmatic interpretation of a priority growth of the first subdivision as a law of economic development. One of the major aspects of the scientific and technological revolution is that with the tremendous scope of scientific research and experimental and design work and the production of the means of production, the efficiency of the latter (that is, the output of consumer goods per unit of capital investments) has been growing rapidly, as a result of which the overall growth of the economy has been accompanied by a stable correlation of the two subdivisions, and often, by a more rapid growth of the second subdivision (production of consumer goods).

The significance of this general postulate is enhanced by the fact that the authors do not confine themselves to analysing the corresponding general economic parameters, but also turn to characterising some concrete aspects of scientific and technical progress, especially in construction.

The last chapter discusses progress in engineering, automation and the growing utilisation of digital automatically programmed tools and industrial robots. It uncovers close connections between technical, economic and social factors, and shows, among other things, how the growth of the absolute size of wages and salaries increases the economic efficiency of new technique.

The most complicated task of the authors was to disclose the specific features of accumulation in the non-material sphere. Turning to this problem, they subjected to convincing criticism the concept of "human capital" current in bourgeois economic science, and at the same time emphasised the specially complex character of the problem of evaluating the results of intellectual labour. To date, there are no direct methods of such evaluation. Therefore, it is necessary to employ various indirect ways and means. No matter how debatable are the methods and means of defining the efficiency of intellectual labour proposed in the book, the authors are quite right, in our view, to suggest their own versions.

The next step in an analysis of the problems of production efficiency will be a special all-embracing study of labour productivity. This work is already under way, with the participation of many authors of this book. There are grounds to believe that this new monograph will be as rich in content and as useful as the one we have just reviewed.

Ya. Pevzner

А. И. ЛЕВКОВСКИЙ. *Мелкая буржуазия: облик и судьбы класса.* М., изд-во «Наука», Главная редакция восточной литературы, 1978, 192 стр.

A. I. LEVKOVSKY, *Petty Bourgeoisie: the Make-Up and Future of the Class,* Moscow, Nauka Publishers, Central Department of Oriental Literature, 1978, 192 pp.

A. Levkovsky's book deals with a wide range of problems on the theme announced by its title. A considerable part of the work is devoted to a historical analysis of the place and role of the petty bourgeoisie in capitalist society and in the class struggle, both in the West and in pre-revolutionary Russia. In this review we shall examine only the problem of the petty bourgeoisie in the newly liberated countries as it is discussed by the author.

In Asia and Africa, strictly speaking, there are not very many countries where the national bourgeoisie plays the predominant role. Among them are the Philippines, Malaysia, Singapore, Sri Lanka, India, the Lebanon, Turkey, Tunisia, Senegal, Kenya, Ivory Coast and Liberia. Revolutionary-democratic power has been established in 15-odd countries (see article written by N. Kosukhin in *Social Sciences,* No. 4, 1979). In a considerable number of the remaining countries the bourgeoisie as such either shares power with the fairly powerful class of landlords (Morocco, for example) or occupies a subordinate position with regard to the "bureaucratic bourgeoisie" (or its military type), as, for example, in Indonesia, Thailand, Pakistan, and the Sudan.

In many countries of Tropical Africa the industrial bourgeoisie is very weak or is just emerging, while in socialist-oriented countries obstacles are raised against its formation as a class, let alone its political development. Finally, in the countries of the Arabian Peninsula a special new type of the bourgeoisie is being formed, which is drawing profits from the sale of oil and is already exporting capital.

The "normal", "classical" capitalism of the Western or Japanese type has not had time to consolidate in the majority of Asian and African countries, due to colonial domination.

Prior to the disintegration of the colonial system, it was theoretically assumed that the gaining of independence by Asian and African countries would give impetus to the development of local capitalism. However, everything proved to be not so simple. The scientific and technological revolution underway in the world, and the need to create modern, capital-intensive industry has played a major role in the newly independent countries. The local bourgeoisie in the majority of the young countries has revealed its helplessness, caused both by its financial weakness and its lack of political authority, initiative and the wish to risk industrial investments. Of great significance is also the fact that capitalism as a social system had discredited itself and socialism increased its attractive force for the popular masses. In these conditions objective reality sharply increased the role of the state.

The author notes that one of the basic social tasks that compelled the growing interference of the state in economic life and the emergence of state capitalism, was the necessi-

ty to somehow regulate and modify the spontaneous growth of conflicts between economic structures and the class forces standing behind them. Thus, the social role of the national bourgeoisie began to diminish precisely at the time when the developed private capitalist structure began to grow stronger.

The petty-bourgeois sections began to free themselves from the domination of the bourgeoisie, while the lower structures started to dissociate themselves from private capitalist enterprise. The road to the development of large-scale "normal" private capitalism was blocked in the majority of countries, whereas the petty bourgeoisie began to quickly advance, under the aegis of the state.

Levkovsky writes that the lower structures are doomed to failure economically in their aggravated competitive struggle with big business. However, in multistructural society there seems to be a way out for them. It lies in a policy, in the state power with whose help the competitor can be defeated, and as a maximum measure, its enterprises could be included in the state sector.

Therefore, the problem of seizing state power becomes the determining one for all structures at some stage. And here the intelligentsia comes to the fore—a force that most of all dominates the political life of the developing countries.

We agree with the author when he writes that the relative independence of this section is one of the major subjective factors making possible society's transition to the non-capitalist path of development. Indeed, a certain degree of independence from the classes connected with big private property allows the intelligentsia that is disappointed in the ability of local and foreign capital to ensure resurrection and "post-colonial" transformation of a country, to accept relatively easily the idea of socialism, which is alone capable of opening the road to genuine progress.

A question arises here as to what kind of socialism and how it should be interpreted. And what kind of intelligentsia, as well? If we take the intelligentsia with a "soul of a petty bourgeois", they are sure to choose a model of state capitalism, infringing on big private capital and ensuring the interests of the petty bourgeoisie. And if we have in mind the intelligentsia capable of breaking through the boundaries of petty-bourgeois outlook, it is a variety gravitating towards democratic power.

It seems to us that the author does not take fully into account such a differentiation when he writes that the petty bourgeoisie in the developing countries, on the whole, is inclined to socialist orientation.

The principal difficulty of the development of scientific socialism in the small proprietors' medium lies in that this medium lacks an adequate social ground for socialist ideology. The main point here is the real class interests of the petty bourgeois, rejecting, by virtue of his dual nature (he is both an owner and a labourer—see V. I. Lenin, *Collected Works,* Moscow, Vol. 10, p. 218, Vol. 18, p. 38, Vol. 25, p. 238, Vol. 30, p. 114; *Complete Works,* Vol. 15, p. 65, Vol. 23, pp. 233-235 [in Russian]) both the domination of big capital and the power of the working class.

The sections of the book devoted to pauperism and the lumpen-proletariat are, in my view, quite interesting and instructive. The author notes that this is a special socio-economic phenomenon engendered by a special transitional state of society. This is not a phenomenon of mature capitalist society with its inherent reserve army of labour, but an organic element of the evolution of society of a transitional (multisectoral) type, which has taken shape and is developing on the territory of the former colonial provinces of capitalism.

Examining the problem of the declassé elements in the developing countries, Levkovsky writes that it assumes tremendous proportions there. Its more important specific feature seems to be that it acquires such a greatly prolonged character that a permanent (although a transitional, in principle) section of the population emerges in society.

The declassé sections of the population often emerge as a destructive, destabilising factor in the developing countries. They are not in a position to be the motive force or the leader, but they can easily be used by other classes. Potentially, these sections are not the fuel for revolution, but rather an uncontrollable force which can be employed by the reactionaries and chauvinist and obscurantist-religious movements. Levkovsky justly notes that this inevitably leads to dangerous political distortions and is fraught with a split in the ranks of the working people.

The reader is sure to find interesting the section entitled "Nations 'Rich' and 'Poor'. Criticism of a Petty-Bourgeois Approach". In it the author gives an original interpretation of the attempts to create friction between the newly free countries and the socialist world and the working-class movement in the West.

The work under review ably combining features of an economic, historical and sociological study, is a result of painstaking research into a great many important social problems, and the author has provided us with a wealth of material.

G. Mirsky

А. В. БРУШЛИНСКИЙ. *Мышление и прогнозирование.* М., изд-во «Мысль», 1979, 232 стр.

A. V. BRUSHLINSKY, *Thinking and Forecasting,* Moscow, Mysl Publishers, 1979, 232 pp.

The book under review can be included in works on the philosophical problems of psychology. The considerable experimental psychological material contained in it is used by the author to substantiate a certain general point of view. The profound positive general psychological premises are elaborated in the monograph in polemics with some current concepts and methods of analysis.

From the very outset the author defines two principal approaches to an analysis of reality, which can be used in studying the process of thinking. These approaches are viewed as opposing each other. One of them is connected with the realisation of definite traditional principles of investigation: numer-

ous attempts to apply the accepted methods of modern natural sciences to the sphere of studying the process of thinking. The author terms this approach "disjunctive". Researchers using the disjunctive approach regard the objects and phenomena of the world as a set of homogeneous elements. The very term "disjunctive" is connected with the fact that according to this point of view, each object or phenomenon is isolated from other objects or phenomena.

The premise about isolation of objects and their possible qualitative homogeneity lies at the basis of all types of quantitative evaluations and methods of mathematical description. The author maintains that in analysing thinking activity it is not possible to single out homogeneous components of the process, isolated from one another. Hence the view of the principal inapplicability of conceptual means of analysis, based on the disjunctive approach, to thinking.

Brushlinsky qualifies his point of view as one opposing the disjunctive approach. He introduces the concept of "non-disjunctivity". This is a complicated concept whose structure includes integrity, continuity (in contrast to discretion of the disjunctive) and a systems character. However, this is not the continuity which distinguishes geometrical structures, for example, and finds its mathematical expression in the methods of analytical geometry. The continuity of analytical geometry has the same homogeneous discretion: for instance, a circumference is determined through the set of a polygon's sides, a curve—through a series of algebraic operations, etc.

The category of non-disjunctivity as it is used by the author denotes qualitative structures that cannot be reduced to the sum or set of their components. This non-disjunctivity is characterised, on the one hand, by spatiality and continuity, and on the other, by non-additivity, irreducibility to a sum of elements in principle. The concept of "non-disjunctivity" is a negative concept. When the author gives a positive characteristic to his position, he calls his point of view a continual-genetic approach.

The main theoretical aim of the work is to prove that an analysis of facts and laws of the psychology of thinking is possible only inasmuch as the principle of non-disjunctivity (as this category is interpreted in the work) is realised in one or another scientific approach. A mental process is always a chain of processal links indissolubly connected with one another and turning into one another. Therefore, a mental process should be regarded as a continual-genetic reality, non-disjunctive in its nature.

The author's general theoretical position allows him to subject to strong criticism the various attempts at mathematicisation of psychology in general, and the psychology of thinking in particular. This criticism is based on the fact that the basic departments of modern mathematics are founded on the disjunctive principle. Mathematics devised for analysing a world of homogeneous objects is unfit whenever the methods and means of analysis used in that science are applied in describing mental processes.

Of great interest are sections of the book in which the author discusses psychological problems proper. The book contains well-substantiated criticism of the theory of interiorisation which

takes its origin from P. Janet and according to which the mental comes into being from the external, material actions of the subject transferred to an ideal plane. The author demonstrates that this theory is based on the groundless assumption that external object activity at its very initial stages is devoid of psychological regulation.

In setting out his own experimental results Brushlinsky emphasises that methodology in his work is based on the principle of an indirect connection of external influences with internal conditions. From this angle, he analyses the variant of the methodology of prompting he himself uses in a number of his own investigations. The material obtained with the help of this method helped to ascertain certain specific features of the process of the self-regulation of cognition in solving complex tasks.

Experiments show another specific feature of mental forecasting of the unknown quality, namely, that it is being done when there is no evident standard of the future final situation, with which one could directly and simply "collate" intermediate and final results of thinking activity. Hence the conclusion that the category of feedback current in cybernetics cannot explain the real structure of thinking. This conclusion is once again included by the author in the discussion of the question: "Can the machine think?", and provides the basis for a negative answer.

The monograph sums up the problems it discusses by pointing to the following three specific features of the continual-genetic nature of thinking: 1) the highest level of *continuity*, dynamics and mutual transformations of all stages and components of the live, real mental process; 2) the strictly defined, gradually and unevenly formed *purposefulness* of the entire process, which is based on the mental forecasting of the unknown and excludes the disjunctive situation of choosing the alternatives; 3) *irreversibility* of thinking activity as a whole (which does not deny, but, on the contrary, presupposes reversibility of some components of this activity, which enter the composition of its mental operations).

In evaluating Brushlinsky's monograph, I would like to emphasise that the author's position is unquestionably justified, if thinking is regarded, philosophically and psychologically, as one of the highest expressions of man's spiritual activity. As for the concrete psychology of thinking, I have some debatable considerations which came to my mind when reading the book.

That which commands man's attention at each given moment should be regarded as an aggregate result of the work of an entire system of psychological architectonics. This system consists of the elements (grey matter levels, zones, cell layers, etc.), which, while being qualitatively original and discrete, form a single non-disjunctive whole in their functional interaction. In this connection a question arises: is it necessary to oppose the disjunctive to the non-disjunctive in such a sharp manner, so disjunctively, so to say, as it is done in the book? If one is to regard thinking not on such a high philosophical plane as it is done in the monograph, one would be able to construct an experiment of solving problems, which would show with sufficient precision the dialectic of the disjunctive and the non-

disjunctive which is specific of many types of thinking.

There are also debatable points concerning the correlationship of psychology and cybernetics. Of course, it is impossible to construct a thinking machine, because thinking is an attribute of living systems. But perhaps cybernetics should not have been criticised, indirectly comparing, as the monograph does, the philosophico-psychological aspect of thinking as the higher spiritual activity, with the laws, processes and operations of mental activity, which can be used in working out new ways of automating managerial processes. All the more so because practice has already demonstrated the high efficiency of such a use of psychological knowledge.

Brushlinsky's book is on the whole interesting by the breadth and fundamentality of the questions it poses, its polemic character, and a deep analysis of the psychological material it contains.

V. Pushkin

Ю. К. ПОПЛИНСКИЙ. *Из истории этнокультурных контактов Африки и Эгейского мира. Гараманткая проблема.* М., изд-во «Наука», 1978, 203 стр.

Yu. K. POPLINSKY, *From the History of Ethnocultural Contacts Between Africa and the Aegean World. The Garamantes Problem,* Moscow, Nauka Publishers, 1978, 203 pp.

Questions about the role and place of ancient Africa in the history of mankind, and the relations of ancient Africans with their neighbours (on land and from the sea), about ethnocultural contacts in the Mediterranean are all very important for historians. Quite a few works have been written on the subject, but only after archaeological finds of recent times which considerably broadened our ideas and knowledge about ancient Africa, was it possible to pass to theoretical generalisations of a wide range and compare extensive materials about ancient civilisations on both sides of the Mediterranean. Such a comparison includes an analysis of the data provided by ancient (especially Greek) authors, notably Herodotus, and recent archaeological data. A researcher turning to this subject, has to have not only profound historical and ethnographic knowledge of Africa and other neighbouring fields, but he should also be well-versed in the philology, history and culture of ancient Greece and Rome. Poplinsky possesses precisely such comprehensive knowledge; he avoided a dangerous one-sidedness in his comparisons and succeeded in showing both partners in their ethnocultural interconnections and interaction fully and objectively.

The author examines the problem of ethnocultural contacts of Africa on the basis of the Marxist-Leninist theory of historical unity of mankind and the mutual influence of cultures. On the basis of the methodology he himself has evolved and drawing on ethnographic, anthropological, archaeological (including rock paintings), linguistic, historical, folklore and onomastic materials, the author examines the crucial problems of the ethnic history of Africa of the second millennium-beginning of the first millennium B.C. He shows the real possibilities and limits of contacts between Africa and the Aegean region during that period.

The first chapter of the book is devoted to the Aegean region. Its most important sections, in our view, are those about the external ties of the Aegean region and the routes of Aegeans' voyages to the African coast. The author adduces quite tangible arguments to prove his contention that at the earlier stage of Afro-Aegean contacts, the eastern zone of the North African coast was predominantly developed, whereas the western part of that coast was included in the contacts later.

The second chapter contains ethnic and economic and cultural characteristics of North Africa in the second-beginning of the first millennium B.C. Reconstructing, to a possible degree, the ethnic map of Africa of that time, the author also reconstructs, among other things, the Trans-Sahara routes. Their dense network proves the existence of close contacts between the Europeoid autochtons of North Africa and the Negroid inhabitants of the Sudan, and then with the continent regions farther removed from the coast. The author reaches a conclusion about the intermediary role of the Libo-Berbers in Africa's ties with Mediterranean peoples. Up to the end of the first millennium B.C. North Africa and Sahara had played the role of a "centre" with regard to the Sudan and the deep-lying regions of Africa.

In a successful attempt to define the economic and cultural types of the region under examination, Poplinsky convincingly connects the drawings of the horse and chariot in Sahara rock drawings with the Aegean contacts of the north of the continent, and above all, with the invasion of Libya and Egypt by the so-called peoples of the sea in the 14th century B.C. This brings him to one of the key aspects of the problem—the question about the Garamantes.

The Garamantes problem is unquestionably one of the most interesting in African studies. All ancient information about this people can be stated in just a few typewritten pages; sometimes they contradict one another (at least, at first glance). To date there are no monographic studies about the Garamantes. We do not know what they were really called (but we do know that Garamantes is not a self-name). We know nothing about the initial period of their history and very little about the time described by the sources.

Poplinsky is the first in our science (and in foreign, for that matter) to regard the Garamantes community in connection with the dispersion of the Aegeans—participants in the march of the "peoples of the sea"—inside the continent. Further, he is also the first to substantiate the concept, according to which the formation of the Garamantes ethnos should be dated not to the beginning of the first millennium, as it has been considered so far, but to the end of the 14th-13th centuries B.C. He solves the problem of "Garamantes chariots" in an interesting manner, connecting it with the problem of the territory of the Garamantes. Analysing Roman-Garamantes relations, the author plausibly explains

the reasons why the Garamantes were able to safeguard their autonomy and trade privileges. Finally, the author gives a general characteristic to Garamantes culture, connecting its specific features with Afro-Aegean contacts. This promising way of investigation is confirmed by a precise analysis of rock pictures, the oral legendary tradition of some peoples in the Aegean Sea region and the very term "Garamantes". Poplinsky's considerations about the anthropological make-up of the Garamantes merit serious attention. His conclusion about the social causes of the heterogeneity of their anthropological composition seems rather interesting, too.

Finally, the author sums up the main results of his work, connecting the data he has obtained with the subsequent stages of the ethnocultural development of the continent.

Poplinsky has made an important contribution to elaborating one of the most complicated and least investigated problems of the ethnic history of Africa as well as the vast region of the Mediterranean. His work has substantially enriched science. Carried out at the juncture of African studies and the studies of the history of the ancient world, it demonstrates the extreme fruitfulness of such a trend in historical ethnography.

A. Dridzo

BIBLIOGRAPHY

AMERICAN STUDIES BY SOVIET SCHOLARS

Below is an annotated list of major books by Soviet researchers engaged in American studies, published in the past several years in the USSR. The list has been compiled by the Institute of US and Canadian Studies, USSR Academy of Sciences (all the books are in Russian).

Pressing Problems of Disarmament, Moscow, Nauka Publishers, 1978, 175 pp.

The book is devoted to the basic aspects of the disarmament problem: questions of nuclear disarmament, banning of other types of weapons of mass destruction, and curtailment of conventional armaments. It examines the bilateral and multilateral talks on the problem that have been, or are being, conducted at various levels.

O. A. Alexandrovskaya, *The Formation of Network of Scientific Research Institutions in the United States*, Moscow, Nauka Publishers, 1979, 208 pp.

The monograph deals with the basic elements comprising the network of scientific research institutions in the United States. Much attention is devoted to regional research centres.

American Literature and Social and Political Struggle. 1960s-Early 1970s, Moscow, Nauka Publishers, 1977, 237 pp.

The work written by a team of authors analyses the characteristic features of the American literature of this period, the main emphasis being laid on timely works of socio-psychological prose, the "political novel", the poetry of protest.

American Bourgeois Theories of Management (Critical Analysis), Moscow, Mysl Publishers, 1978, 366 pp.

The work pays main attention to the theories and concepts of management, including the latest methodological approaches. It examines in detail concrete managerial concepts currently implemented.

American Yearbook, Moscow, Nauka Publishers, 1976, 346 pp.

The Yearbook contains a number of articles on the modern and contemporary history of the USA, in particular, trends to normalising Soviet-American relations in recent years, the AFL policies in Latin American countries, the US stand at the Cairo Conference of

1943 (November-December), the penetration of American capital in Rumania on the eve of the First World War, etc.

American Yearbook, Moscow, Nauka Publishers, 1977, 255 pp.

This Yearbook carries articles on the activities of the Committees of Correspondence and the Sons of Liberty Organisation on the eve of the War of Independence, the struggle of the Jackson Administration against the Bank of the USA, Woodrow Wilson's agrarian legislation, and the development of American liberal thought in the 1930s.

American Yearbook, Moscow, Nauka Publishers, 1978, 319 pp.

There are articles about the Soviet-American negotiations of 1945-1949, the US stand at the Casablanca Conference and policies in the Middle East, about De Leone, a propagandist of Marxism in the USA, the activity of Theodore Roosevelt as New York governor, and also the French and German historiography of the War of Independence.

American Yearbook, Moscow, Nauka Publishers, 1979, 351 pp.

This Yearbook contains articles about the development of state-monopoly capitalism in the USA in the early 20th century, in the years of F. D. Roosevelt's New Deal and after the Second World War, about the formation of democratic socio-political thought in the United States, the emergence of the ultra-right fundamentalist movement and also on the history of Soviet-American relations. There are critical reviews of the American historiography of the 1861-1865 Civil War and the United States' policies towards the socialist countries of Europe.

American Public Opinion and Politics, Moscow, Nauka Publishers, 1978, 293 pp.

The monograph examines the mechanism of the formation of public opinion in the United States; its influence on the country's political life in the 1960s-1970s; bourgeois concepts of the problems of public opinion; leading organisations conducting public opinion polls and their theoretical and methodological foundation.

US Global Strategy in Conditions of the Scientific and Technological Revolution, Moscow, Mysl Publishers, 1979, 452 pp.

The monograph is a comprehensive study of deep-going, long-term processes developing in the USA under the impact of the scientific and technological revolution. Considerable attention is devoted to foreign policy questions, foreign policy strategy is analysed, and the new aspects of foreign policy engendered by the scientific and technological revolution are examined.

T. K. Belashchenko, *The USA: 200 Years—200 Wars,* Moscow, Voenizdat Publishers, 1976, 232 pp.

The author traces the evolution of the US armed forces, shows their role as an instrument of suppressing the national liberation movements and democratic freedoms both in and outside the United States.

I. A. Belyavskaya, *Theodore Roosevelt and Socio-Political Life in the USA,* Moscow, Nauka Publishers, 1978, 308 pp.

The work analyses the outlook of President Theodore Roosevelt and his role in the country's history, drawing on official documents, periodical publications, and correspondence and memoirs of Roosevelt and his contemporaries.

R. G. Bogdanov, A. A. Kokoshin, *The USA: Information and Foreign Policy,* Moscow, Nauka Publishers, 1979, 310 pp.

The authors discuss the information-analytical activity of the State Department and other foreign policy agencies of the USA; the various forms and types of incoming information and its role in mapping out foreign policy.

A. V. Valyuzhenich, *American Liberalism: Illusions and Reality,* Moscow, Nauka Publishers, 1976, 343 pp.

Examining American liberalism, its basic tenets, economic views, ideological and political trends, the author places key emphasis on the evolution of the concepts of liberal theory and practices and the influence of the class struggle on them.

The State System of the USA, Moscow, Yuridicheskaya literatura Publishers, 1976, 328 pp.

The work shows the principal state and political institutions of the USA in their development during the 200 years of American history; the evolution of the principles of bourgeois democracy proclaimed in the Declaration of Independence and the Constitution of 1787; the class sources, traditions, ideology and policies of the Democratic and Republican parties. The book also gives a characteristic of the US judicial system.

V. I. Gromeka, *The Scientific and Technological Revolution and Modern Capitalism,* Moscow, Politizdat Publishers, 1976, 278 pp.

The author examines the socio-political consequences of the scientific and technological revolution in advanced capitalist countries, its role in the development of state-monopoly tendencies, as well as the impact of capitalist production relations on the character and progress of science and technology.

V. I. Gromeka, V. I. Maslennikov, V. A. Fedorovich, L. D. Filippova, *The USA: Science and Education,* Moscow, Nauka Publishers, 1974, 478 pp.

The monograph examines the mechanism of the state management of science, organisation of higher education in the USA, the system of state contracts for fundamental and applied research and the creation of new military and civil techniques, the principles of price formation of "scientific products", and the economic and legal mechanism of incentives to scientific research.

V. F. Davydov, T. V. Oberemko, A. I. Utkin, *The USA and West European "Centres of Power",* Moscow, Nauka Publishers, 1978, 287 pp.

The book is devoted to US relations with Britain, France and the Federal Republic of Germany. Attention is centred around the principal spheres of partnership and rivalry of the USA and West European countries, and prospects of their relations.

V. V. Zhurkin, *The USA and International Political Crises,* Moscow, Nauka Publishers, 1975, 325 pp.

The author analyses the main patterns and characteristic features of US policies in international crisis situations, and the emergence and development of foreign doctrines and bourgeois politology serving US foreign policy.

R. I. Zimenkov, *US Scientific and Technological Expansion in Develop-*

ing Countries, Moscow, Nauka Publishers, 1977, 191 pp.

The work examines the mechanism, forms and branch structure of US expansion under the guise of scientific and technical aid to African, Asian and Latin American countries, its impact on the socio-economic development of these countries, and prospects of this aid for the coming years.

E. A. Ivanyan, *The White House: Presidents and Policy*, Second Revised Edition, Moscow, Politizdat Publishers, 1979, 383 pp.

The monograph presents political portraits of the US presidents in the 20th century: from William McKinley to Lyndon B. Johnson, and traces the evolution of supreme power in the USA. The political course of 12 presidential administrations is analysed, taking due account of the social factors, historical conditions and specific features of social development and correlationships between the social forces in the given periods.

E. P. Kassirova, *Crisis of Social Policy (The State and Social Security)*, Moscow, Mysl Publishers, 1978, 255 pp.

The system of social security in the USA and its development are viewed in connection with the growth of the social requirements of the working class and its struggle for improving its socio-economic condition.

G. B. Kochetkov, *Computers in US Business Management*, Moscow, Nauka Publishers, 1977, 199 pp.

The monograph is devoted to the methods of creating, forms and organisational structures of the information systems in managing modern production under state-monopoly capitalism. Special attention is devoted to the role and place of information in the activities of corporations.

V. I. Lan, *The USA: From the Spanish-American to the First World War*, Moscow, Nauka Publishers, 1975, 368 pp.; by the same author, *The USA: From the First World War to the Second World War*, Moscow, Nauka Publishers, 1976, 493 pp.; by the same author, *The USA in the War and Postwar Years*, Moscow, Nauka Publishers, 1978, 686 pp.

These three books form a comprehensive study of the history of the United States. Drawing on extensive material, the author examines the basic stages of the economic development and the foreign policies of the USA in the 20th century.

V. M. Leibin, *Philosophy of Social Criticism in the USA*, Moscow, Nauka Publishers, 1976, 206 pp.

The author shows various critical trends in modern American philosophical and sociological literature and emphasises that under the impact of such factors as unstable economic development, and contradictory consequences of the scientific and technological revolution the optimism of the 1950s-1960s in philosophy is being replaced by critical views and sentiments.

Mass Movements of Social Protest in the USA (1970s), Moscow, Nauka Publishers, 1978, 343 pp.

The book describes the social basis, tactics and programme of the principal movements of the democratic forces—trade-union, Black, anti-war, student, women's, etc.

A. A. Mishin, *State Law of the USA*, Moscow, Nauka Publishers, 1976, 207 pp.

The author examines the formation procedure of the highest administrative and legal institutions, the competence and activities of the supreme administrative bodies, electoral law and and the electoral system, and relations between the Federation and the states.

G. N. Nikerov, *Administrative Law of the USA*, Moscow, Nauka Publishers, 1977, 200 pp.

The work characterises the administrative structure, the working out of legal standards, the judicial activity of the Administration, the exercise of judicial control over the decisions of administrative bodies, the Administration's responsibility for the harm done to private citizens.

V. D. Pisarev, *The USA and the World Ocean*, Moscow, Nauka Publishers, 1977, 269 pp.

The monograph examines the state-monopoly programme of the USA in exploring and developing the World Ocean resources. Special attention is given to the activities of the US ruling circles in the elaboration of the methods of regulating the expanses and resources of the sea, as well as US policy in conducting international oceanographic research.

US Policies in Asia, Moscow, Nauka Publishers, 1977, 272 pp.

The book discusses US policies in Japan, Indochina and in South Asia during the 1960s-1970s, and the connection of these policies with US global strategy.

E. I. Popova, *US Senate and Foreign Policy. 1969-1974*, Moscow, 1978, 232 pp.

The author shows the Senate's participation in rearranging the foreign policy course of the USA, the struggle in Congress on questions of limiting armaments and a turn in relations with the USSR; the crisis of NATO, the defeat in Vietnam and a search for new policies in Asia.

Problems of American Studies, Issue I, Moscow University Press, 1978, 226 pp.

The first section of the issue is devoted to history and law. It contains articles about the ideological sources of the American Constitution of 1787, the isolationism of the 1920s, the state and legal regulation of the conservation of nature, etc. In the second section—on economy and geography—there are articles on the financial mechanism of the activities of international monopolies, the use of state finances in the interests of monopoly capital, modern trends and problems of population settlement, regional aspects of environmental pollution in the USA. The third section—philosophy and philology—includes articles on the problems of "counter-culture" and an article on critical realism in the postwar American novel.

Problems and Contradictions of the American Economy, Moscow, Nauka Publishers, 1978, 615 pp.

This monograph written by a group of authors examines the consequences of the scientific and technological revolution, special features of crisis situations in the key spheres of the American economy, and also the policy of social manoeuvring pursued by state-monopoly capitalism in the USA.

V. K. Puchinsky, *Civil Procedure in the USA*, Moscow, Nauka Publishers, 1979, 190 pp.

The author discusses civil procedure in American courts and its various aspects, in particular, the legal status of the parties to civil

proceedings, the concept and classification of court evidence, the institution of action at law.

Yu. I. Rigin, *The State and Monopolies in the USA (State Incentives to Structural Shifts in the Economy)*, Moscow, Mysl Publishers, 1978, 239 pp.

The monograph discusses state incentives to structural shifts in the economy in postwar years. Considerable attention is devoted to the state policy in the field of energy, as well as its influence on regional economic development.

V. A. Savelyev, *The USA: Senate and Policy*, Moscow, Mysl Publishers, 1976, 196 pp.

The author characterises the role and place of the Senate in present-day political life in the USA, its social functions and impact on the shaping of US domestic and foreign policies.

Modern US Foreign Policy Concepts, Moscow, Nauka Publishers, 1978, 382 pp.

The work analyses the latest concepts and instruments of US foreign policy in the 1970s, during the Nixon and Ford Administrations, the modern "material base" of ideological struggle, and the influence of that struggle on international and Soviet-American relations.

V. I. Sokolov, *American Capitalism and the Problem of Environmental Protection*, Moscow, Nauka Publishers, 1979, 197 pp.

The book examines the impact of the ecological crisis on socio-economic processes in the USA, the methods of environmental pollution control, the structure and functioning of the mechanism of utilisation of nature in the USA.

L. Yu. Slyozkin, *At the Sources of American History. Virginia. New Plymouth, 1606-1642*, Moscow, Nauka Publishers, 1978, 335 pp.

The monograph describes the first English colonies in North America from their foundation to the English revolution in the mid-17th century.

The USA: Foreign Economic Strategy, Moscow, Nauka Publishers, 1976, 495 pp.

The work describes the main trends and modern forms and methods of US foreign economic strategy. Great attention is devoted to the export of capital, the strengthening of the state-monopoly regulation of US foreign economic expansion, and Soviet-American economic relations.

The USA: the State and the Economy. The Mechanism of State-Monopoly Regulation of the Economy, Moscow, Nauka Publishers, 1976, 590 pp.

The book describes the system of state bodies forming and conducting the policy of economic regulation; budget levers; monetary and credit policy; regulation of the regional economies and infrastructure; state economic forecasting and programming.

The USA—Western Europe: Partnership and Rivalry, Moscow, Nauka Publishers, 1978, 422 pp.

The evolution of relations between the USA and West European countries, their economic, political and military ties are regarded as ones based on the coinciding class interests of the ruling quarters of these countries.

The USA: Political Thought and History, Moscow, Nauka Publishers, 1976, 619 pp.

The book contains a critical analysis of doctrines and concepts of American political thought over the 200-year period. It thoroughly examines the past and present of the ideas of the American revolution, the theory of "manifest destiny", the doctrine of the "balance of power", and the political creeds of the Democratic and Republican parties.

G. A. Trofimenko, *The USA: Politics, War, Ideology*, Moscow, Mysl Publishers, 1976, 359 pp.

The author analyses military-political thought in the USA from the very inception of the American bourgeois republic to our day, traces the adaptation of the traditional strategic principles to the new historical situation as exemplified by the strategy of "deterrence", "mass retaliation" and "flexible response".

V. A. Fedorovich, *American Capitalism and State Economic Management (Federal Procurement System: Evolution, Problems, Contradictions)*, Moscow, Nauka Publishers, 1979, 480 pp.

The book examines new forms of the development of state-monopoly capitalism in the USA; the Federal Procurement System (FPS) as a complex instrument of state enterprise, regulation of the economy and management of scientific and technological progress.

S. V. Filippov, *Judicial System of the USA*, Moscow, Nauka Publishers, 1979, 172 pp.

The author characterises the structure and functioning of American courts at the federal and the state level, as well as the American concepts of the role of courts in the country's political system.

V. S. Shein, *The USA and Southern Europe: Crisis of Atlantic Partnership (1969-1978)*, Moscow, Nauka Publishers, 1979, 192 pp.

The monograph discusses the basic trends of Washington's activity in strengthening the "southern flank" of NATO, US policies towards Portugal, Italy, Greece, Turkey and also towards Spain which formally is not a NATO member.

SCIENTIFIC THEMATIC COLLECTIONS

Published by the "Social Sciences Today" Editorial Board of the USSR Academy of Sciences are the following series of scientific thematic collections:

PROBLEMS OF THE CONTEMPORARY WORLD
— in English, French, German, Portuguese, and Spanish

WORLD PEACE AND DISARMAMENT
— in English, French, German, Portuguese, and Spanish

THE DEVELOPING COUNTRIES: PROBLEMS AND PROSPECTS
— in English, French, Portuguese and Spanish

LATIN AMERICA: STUDIES BY SOVIET SCHOLARS
— in Spanish

ORIENTAL STUDIES IN THE USSR
— in English and French

AFRICAN STUDIES BY SOVIET SCHOLARS
— in English, French, and Portuguese

SOVIET ETHNOGRAPHICAL STUDIES
— in English, French and German

The collections acquaint readers with the latest studies of Soviet scholars in philosophy, history, economics, sociology and other fields of the social sciences, with Marxist-Leninist approach to the present-day problems of world development.

Collections may be ordered through bookstores and firms handling the Soviet publications in your country and doing business with V/O "Mezhdunarodnaya kniga" (121200, Moscow, USSR)

"Problems of the Contemporary World" Series

Already published:

1977

Philosophical Concepts in Natural Sciences—Eng., Fr., Ger., Span.
The World Population Today (Ethnodemographic Processes)—Eng., Ger., Span.
Theoretical Aspects of Linguistics—Eng., Ger., Span.
Soviet Studies in US History—Eng., Fr., Span.
French Studies by Soviet Scholars—Fr.
The Law of the Sea: Topical Problems—Eng., Span.
Ethnography and Related Sciences—Eng.
Resources and Economic Growth—Eng., Fr., Span.
Soviet Studies in the History of Science—Eng., Fr., Ger., Span.
Historical Materialism: Theory, Methodology, Problems—Eng., Fr., Ger., Span.
Remaking of Nature Under Socialism—Eng.
The Great October Socialist Revolution and the World Social Progress—Eng., Fr., Ger., Port., Span.

1978

Fundamental Law of the Socialist State of the Whole People—Eng., Fr., Ger., Span.
Pages from the History of the Anti-Fascist War—Eng., Ger.
Bourgeois Democracy and Human Rights—Eng., Fr., Ger., Port., Span.
No! to Racism and Apartheid—Eng., Fr., Port., Span.
Youth in the Modern Society—Eng., Fr., Ger., Port., Span.
From the Historical Experience of the Leninist Komsomol—Eng., Fr., Span.
The October Revolution and the Youth—Eng., Fr., Span.
The Unity of Social and Scientific Progress under Socialism (2nd, enlarged ed.)—Eng.
The Second World War and Our Time—Eng.
The Working Class and Social Progress—Eng.
Non-Alignment: Its Friends and Adversaries in World Politics (2nd, enlarged ed.)—Eng., Span.

Philosophy and World-Views in Modern Science—Eng., Fr., Ger., Span.
Aesthetics and the Development of Literature—Eng., Fr., Ger., Span.
Constitution of the USSR: Theory and Policy—Eng., Fr., Port., Span.
The Development of Soviet Law and Jurisprudence—Eng., Fr.
Soviet Studies in Ethnography—Eng.
Ethnography and Ethnic Processes—Eng.
The USSR: Sixty Years of Struggle for Peace—Eng.
Soviet Studies in Sociology—Eng., Fr., Ger., Span.

1979

Socialism and Human Rights—Eng., Fr., Ger., Port., Span.
Soviet Economic Studies: New Researches—Eng., Fr., Ger., Port., Span.
Archaeology and Ancient History of Siberia—Ger.
Soviet Policy of Peace—Eng., Fr., Ger., Port., Span.
Political Systems: Development Trends—Eng., Fr., Port., Span.
Political Theory and Political Practice—Eng., Fr., Span.
"Conflict Strategy" and International Situation—Eng.
The Comparative Historical Method in Soviet Mediaeval Studies—Eng.
Penal Law in the USSR—Eng.
Socialism: Some Aspects of the Social and Economic Development—Span.

1980

Ethics. Communist Morality—Eng., Fr., Ger., Span.
Post-Mao Maoism.
Part One. *The Ideology and Policy of Great-Power Chauvinism.*
Part Two. *Beijing's Hegemonism and Expansionism*—Eng., Fr., Ger., Port., Span.

Being prepared for press:

Historical Science in the USSR: New Researches—Eng., Fr.
Methodology of History—Eng., Fr.
History of the Historical Science—Eng., Fr.
Sports and the Mode of Life—Eng., Fr., Ger., Port., Span.

The Unity of Social and Scientific Progress under Socialism—Span.
Leo Tolstoy and Our Times—Eng., Fr., Ger., Port., Span.
The Comparative Historical Method in Soviet Mediaeval Studies—Fr., Ger.
Soviet Oriental Studies Today (in two parts)—Eng., Fr., Ger., Span.

"African Studies by Soviet Scholars" Series

Already published:

1980

Present-Day Development of Africa—Eng., Fr., Ger., Span.

"Latin America: Studies by Soviet Scholars" Series (in Spanish)

Already published:

1978

Studies in the History of Cuba. Part One. *The Colonial Period Ancient Civilisations of America*

1979

Studies in the History of Cuba. Part Two. *Bourgeois Cuba*
Puerto Rico: Problems of the History and Present Development

Being prepared for press:

Studies in the History of Cuba. Part Three. *Revolutionary Cuba*
Revolution and Counter-Revolution in Chile
Vol. I. *Popular Unity. The Struggle for Power.*
Vol. II. *The Historical and International Significance of the Experience*
Soviet-Latin American Relations (Collection of Documents)

* * *

CONTRIBUTORS TO THIS ISSUE

I. NOVIKOV, Deputy Chairman of the USSR Council of Ministers and Chairman of the 1980 Olympic Games Organising Committee, is the author of articles on Soviet economics and the Olympic movement, notably, the coming 22nd Olympiad.

S. PAVLOV, Chairman of the Committee for Physical Culture and Sport under the USSR Council of Ministers, Chairman of the USSR Olympic Committee. Author of publications on physical culture and sport, the international sports, including the Olympic movement, on the moral and physical education of the youth.

L. MATVEYEV, D. Sc. (Pedagog.), Head of the Chair of the Theory of Physical Education at the Lenin Central State Institute of Physical Culture. Author and co-author of the monographs *Theory and Methods of Physical Education, The Soviet System of Physical Education, The Principles of Sports Training,* and of many works on the theory of physical education, physical culture and sport.

V. STOLYAROV, D. Sc. (Philos.), Head of the Chair of Scientific Communism at the Lenin Central State Institute of Physical Culture. Author of articles on the sociology of sport and of monographs devoted to problems of logic and methodology among them *The Process of Change and Its Cognition, Dialectics as the Logic and Methodology of Science.*

O. MILSHTEIN, Cand. Sc. (Pedagog.), associate of the All-Union Research Institute of Physical Culture. Specialises in the sociology of sport, author of the books *The Sociology of Physical Culture and Sport in the USSR, Soviet Olympian: a Social Portrait, Social Profile of the Soviet Sportsman,* as well as of a number of articles on this subject.

I. FROLOV, Corresponding Member, USSR Academy of Sciences, member of the Editorial Council of this journal. Author of many works, including the following articles published in *Social Sciences:* "Contemporary Science and Humanism" (No. 2, 1973); "Science and the Prospects for Man" (No. 3, 1976); "The Global Problems of Our Times" (No. 4, 1977, together with V. Zagladin); "Socio-Philosophical Aspects of Demography" (No. 4, 1978).

V. VARTBEVA, Corresponding Member, USSR Academy of Sciences, author of numerous works on linguistics, including *The Development of the National Literary English Language, Grammatical Principles of Language Description, Contemporary Typology and Its Relationship with Contrasting Linguistics.*

B. LOMOV, Corresponding Member, USSR Academy of Sciences, Director of the Institute of Psychology, USSR Academy of Sciences, President of the USSR Society of Psychologists. Author of many works on psychological problems of space flights and systems approach to psychology, including *Systems Approach in Engineering Psychology, Psychological Processes and Social Communication, Concerning Problems of Social Communication in International Space Flights* (in co-authorship).

T. GOLUBTSOVA, Deputy Minister of Culture of the USSR. Author of publications on general questions of cultural development and on problems of cultural life.

M. MAMARDASHVILI, D. Sc. (Philos.), associate of the Institute of the History of Natural Science and Engineering, USSR Academy of Sciences. Author of the book *Forms and Content of Thinking* and of the works *Concerning the Problem of the Method of the History of Philosophy, Analysis of Consciousness in the Works of Marx, Problem of the Objective Method in Psychology,* and of other writings.

A. KUTSENKOV, D. Sc. (Hist.), Editor-in-Chief of the journal *Peoples of Asia and Africa.* Author of the monographs *India: Economy and Foreign Trade; Political Struggle in India* and of a series of articles on the socio-political development of the developing countries.

V. SHEINIS, Cand. Sc. (Econ.), leading researcher at the Institute of the World Economy and International Relations, USSR Academy of Sciences. Specialist in the political economy of capitalism and author of works on this subject which include *Portuguese Imperialism in Africa after the Second World War, Current Problems of the Political Economy of Modern Capitalism* (in co-authorship).

G. SMIRNOV, D. Sc. (Econ.), associate of the Institute of Africa, USSR Academy of Sciences. Specialises in the economies of the developing countries. His books include *The Theory and Methodology of Planning in the Developing Countries.*

G. SREDIN, Colonel-General, Deputy Chief of the Political Department of the Soviet Army and Navy. Author of many works on the building up of the armed forces and on political work in the Army.

V. GANTMAN, D. Sc. (Hist.), Head of the Sector of Theoretical Problems of the Study and Forecasting of International Relations at the Institute of the World Economy and International Relations, USSR Academy of Sciences. Specialist in international relations, specifically in "crisis situations", and author of a number of works on this subject.

Yu. KAGRAMANOV, writer, author of many articles on the problems of contemporary Western social thought and culture, and of the book *Without a Banner.*

V. KABO, D. Sc. (Hist.), associate of the Institute of Ethnography, USSR Academy of Sciences, studies problems of the ethnogenesis of the aborigines of Australia. Author of the monographs *The Origin and Early History of the Aborigines of Australia, Tasmanians and the Tasmanian Problem.*

A. CHESNOKOV, Cand. Sc. (Pedagog.), Deputy Director of the All-Union Research Institute of Physical Culture. Author of a number of works in the field of physical education, including *The Key Problems of the Physical Education of the Youth* and *The Organisation and Management of the Physical-Culture Movement.*

OUR GLOSSARY

SOCIAL CONSCIOUSNESS is one of the basic notions in philosophy, sociology and psychology. Marxism proceeds from the premise that consciousness cannot be analysed or understood outside social life. "Consciousness is... from the very beginning a social product, and remains so as long as men exist at all" (Marx and Engels, *The German Ideology*, Moscow, 1968, p. 42).

Social consciousness is a reflection of social being expressed in language, science and philosophy, in works of art, in ideology, religion, in the social norms and views of classes, social groups, etc. It has a complex structure and various levels, from ordinary mass consciousness to the highest forms of theoretical thinking. Social consciousness includes various forms: science, philosophy, art, morality, religion, politics, law. Reflecting social being it possesses relative independence and has an inverse effect on the life of society.

As a rule social consciousness does not imply something individual, personal but rather the views and ideas characteristic either of the given society as a whole or of a certain social group. Just as society is not a "sum-total" of the people that comprise it, so social consciousness is not a "sum-total" of the consciousnesses of individuals but a qualitatively unique phenomenon or system which lives its own relatively independent life. There is continuous interaction between the personal and social consciousness, in which the elements and norms of consciousness that have been historically established by society, become the personal convictions of the individual, the source of his or her moral standards, aesthetic feelings and ideas. Personal ideas and convictions, in their turn, assume the character of social value and acquire the significance of social force when they become a part of social consciousness.

GREAT-POWER CHAUVINISM is one of the extreme forms of nationalism, the ideology and policy of the ruling classes of a nation who proclaim their nation to be the "supreme" nation. Great-power chauvinism arose in the epoch of the emergence of bourgeois nations, of national and multi-national states and of colonial empires and reached its apogee in the epoch of imperialism.

Great-power chauvinism manifests itself, in particular, in ignoring national features and not recognising in practice the principle of national equality. It is aimed at the enslavement by one nation of other nations, at their discrimination in the economic, political, cultural and other spheres of life and at depriving them of their sovereignty. Great-power chauvinism is characterised by the preaching of national exclusiveness, the contrasting of the interests of one nation to the interests of all other nations, the propagation of national arrogance, the kindling of enmity and hatred among nations, the persecution of people of other nationalities.

[For more about chauvinism, including great-power one, see V. I. Lenin, "The Working Class and the National Question," (*Collected Works*, Moscow, Vol. 19); "Critical Remarks on the National Question" (Vol. 20); "On the Struggle Against Social-Chauvinism (Vol. 21); "Social-Chauvinist Policy Behind a Cover of Internationalist Phrases" (Vol. 21)].

DENMARK

Akademisk Boghandel,
Universitetsparken, Aarhus-C;
Sputnik International Import og Boghandel,
Vester Voldgabe 11, 1552,
Copenhagen K;
Rhodos International Subscription Agency,
36, Strandgade, DK-1401,
Copenhagen K.

FINLAND

Akateeminen Kirjakauppa,
Postilokero 128, Helsinki 10;
Kansankulttuuri Oy,
Simonkatu 8, Helsinki 10;
Rautakirja Oy,
Pl 1,01641 Vantaa 64.

GHANA

Science Spot Book Shop,
P. O. Box 10331, Accra North.

GREECE

"Planet" Co.,
C. Camarinopoulos,
Asklepjiu, 33 Athens.

GUYANA

GNTC,
45/47; Water Street,
P. O. Box 308, Georgetown.

HONG KONG

Apollo Book Co.,
27, Kimberley Road,
P. O. Box 95710, Kowloon;
Great Eastern Book Co.,
123 Henessy Road,
13/F. P. O. Box 20005,
Hong Kong.

INDIA

People's Publishing House (P) Ltd.,
Rani Jhansi Road, New Delhi-55;
Magazine Centre,
2nd Floor, M.C.D. Buildings
D.B. Gupta Rd. Paharganj,
New Delhi 110055;
Lok Vangmaya Griha,
190-B Khetwadi Main Road,
Bombay-4;
People's Book House,
Piramshah Manzil, Relief Road,
Ahmedabad;
Vijay Stores,
Station Road, Anand 388001;
Magazine Centre,
2nd Floor, Ganapathi Bldgs,
B. V. K. Iyengar Road,
Bangalore-560053;
People's Book House,
Opp. B.N. College
Patna-80 000, Bihar;
Manisha Granthalaya (P) Ltd.,
4/3B, Bankim Chatterjee Street,
Calcutta-12;
National Book Agency (P) Ltd.,
No. 2 Surya Sen Street
Calcutta-700012;
Bingsha Shatabdi,
22/A, Arabinda Sarani, Calcutta-5;
Visalaanhdra Publishing House,
Chandram Bldgs,
Vijayawada-520004
A.P.;
Magazine Centre,
54 Abid Shopping Centre Lane,
(Chirag Ali), Hyderabad, 500001;
New Century Book House (P) Ltd.
41/B Sidco Industrial Estate,
Madras-600098;
Navakarnataka Publications
Sarpabhushana Mutt Compound,
Kempegowda Circle,
Bangalore-9;

Magazine Centre,
56/5-6 Shatranji Mohal
Kanpur India
Prabhath Book House,
Head Office Prabhath Bldg.
Trivandrum-24;
Vijay Stores,
62, Kalyan Bhuvan, Ahmedabad-1;
Vijay Stores,
Rajni, 1st Floor, Bhupendra Road,
Rajkot-1;
Punjab Book Centre S.C.O.
1126-27 Sector 22-B,
Chandigarh-22.

JAMAICA

Independent Book Stores,
2, Wildman Street, Kingston W.1.

JAPAN

Nauka Ltd.,
2-30-19, Minami-Ikebukuro,
2-chome, Toshima-ku, 171 Tokyo;
Nisso Tosho Ltd.,
1-5-16, Suido.
Bunkyo-ku Tokyo;
Kaigai Publications Ltd.,
P. O. Box 5020,
Tokyo International,
Tokyo 100-31;
Far Eastern Book-Sellers,
Kanda, P.O.B. 72, Tokyo, 101-91

JORDAN

Jordan Distribution Agency,
P. O. Box 375, Amman,

NEPAL

Baje Ko Pasal.
Bank Road, Biratnagar, P.O.1,
Biratnagar;
International Book House,
11/20, Kamalakshi, Post Box 32,
Katmandu.

NETHERLANDS

"Pegasus" Boekhandel,
Leidsestraat 25, Amsterdam.

NEW ZEALAND

Progressive Book Society Ltd.,
21 Elliott Str., Auckland I.;
Technical Books, Ltd.,
262 Lambton Quay, Wellington;
New Zealand Tribune,
P. O. Box 19-114, Auckland.

NORWAY

A/S Narvesens Litteraturtejenste,
Bertrand Narvesens vei 2,
Postboks 6140, Oslo 6;
Tanum-Cammermeyer Subscription Centre,
Karl Jahansgt. 43, Oslo 1;
Norsk-Sovjetrussisk Samband,
Rådhusgt, 8-V, Oslo;
Universitetsbokhandelen
307, Blindern, Oslo 3.

PAKISTAN

Standard Publishing House,
Marian Hotel, Bonus Road,
Karachi-4.

P.D.R.Y.

The 14th October Printing Publication, Distribution and Advertising Corporation,
P. O. Box 4227, Aden.

SINGAPORE

New Soviet Gallery Pte., Ltd.,
Shop No. 1.66-1.68,
1st Floor Lucky Plaza,
304 Orchard Rd., Singapore-9.

SRI LANKA

People's Publishing House,
124, Kumaran Ratnam Road,
Colombo-2;
Lake House Bookshop,
100, Chittampalam Gardener
Mawatha, Colombo 2.

SUDAN

Sudanese Intercontinental
Marketing Co.,
P. O. Box 1331, Khartoum.

SWEDEN

Wennergren-Williams AB,
Box 30004
S-104 25 Stockholm 30;
Gumperts Bokhandel AB,
Södra Hamngatan 35, Göteborg;
Almqvist & Wiksell,
26, Gamla Brogatan, Box 62
S-101 20 Stockholm;
Gleerupska
Universitets-Bokhandel,
Lund;
Förbundet
Sverige-Sovjetunionen,
Katarinavägen 20, 1 tr.,
116 45 Stockholm.

SYRIA

Maysaloon Bookshop,
P. O. Box 2675 Maysaloon Street,
Damas;
Dar-al-Fair Edition
et Distribution,
Rue Al-Kouatly,
En Face du Cercle des Officièrs,
Alep.

TANZANIA

Tanganyika Standard
(Newspapers) Ltd.,
P. O. Box 9033,
Dar es Salaam.

TURKEY
Temel Dağitim,
Himaye-i Etfal sokak
Orhanbey Işhani, No. 6/1,
Çağaloğlu,
Istanbul

UNITED KINGDOM

Central Books Ltd.,
14 The Leathermarket,
London SE1 3ER;
Collet's Holdings, Ltd.,
Denington Estate,
Wellingborough Northants.
NN82 QT

USA

Four Continent Book Corporation,
149 Fifth Ave., New York,
N.Y.10010;
Imported Publications Inc.,
320 West Ohio Street,
Chicago, Illinois 60610;
Stechert-Macmillan, Inc.,
7250 Westfield Avenue,
Pennsauken, New Jersey 08110;
EBSCO Subscription Services,
17-19 Washington Avenue,
Tenafly, New Jersey 07670;
Znanie Book Store,
5237 Geary Boulevard,
San Francisco, Ca. 94118.

«ОБЩЕСТВЕННЫЕ НАУКИ» № 2, 1980 г.
на английском языке

IN OUR NEXT ISSUE:

Historical Sciences in the USSR
(15th International Congress of Historical Sciences)

The Scientific and Technological Revolution and Modern Capitalism

Industrialisation in the Developing Countries

Phenomenology and Our Time

Western Youth Counterculture

Environmental Protection in the USSR

Issued by the "Social Sciences Today" Editorial Board

Printed by Nauka Publishers