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USSR Report

HUMAN RESOURCES

(FOUO 7/81)

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DEMOGRAPHY

DEMOGRAPHIC POLICY DEEMED NECESSARY FOR LONG-TERM SOCIAL, ECONOMIC PLANNING

Moscow DEMOGRAFICHESKAYA POLITIKA V SSSR in Russian 1981 (signed to press 9 Feb 81) pp 3-9

[Title, annotation, introduction, and table of contents from the book "Demographic Policy in the USSR" by A. Ya. Kvasha, Izdatel'stvo "Finansy i statistika", 6000 copies, 198 pages]

[Text] In examining the current trends of population development in the USSR, the author gives particular attention to the problems of working out an effective demographic policy in the country, population reproduction, and the relationship of demographic policy to the socio-economic policy of the party, which is aimed at the utmost improvement of the workers' well-being and the comprehensive development of the individual. This work analyzes the basic methodological approaches to determining the volume of expenditures for implementing a demographic policy throughout the country, on the whole, and in its individual regions.

The book is intended for demograhpers, economists, sociologists, and other specialists interested in the population problems of the USSR.

Introduction

In recent years the working out of an effective demographic policy in the USSR has become the most important direction of research in population problems. "Environmental and population problems, which have recently become acute," it was noted at the 25th Congress of the CPSU, "must be given consideration by Soviet scholars. Improving the socialist utilization of nature and working out an effective demographic policy represent an important task for the whole system of natural and social sciences"[1].

The necessity of an active influence on demograhpic phenomena on the part of society has been noted repeatedly in the decisions of the party and the government. In 1931 the Plenum of the Central Commitee of the VKP [All-Union Communist Party (of Bolsheviks)] adopted a decision to regulate migration to Moscow. Annual allowances to families during the first 5 years of a child's life were introduced on 27 July 1936 by a resolution of the USSR SNK [Council of People's Commissars, 1917-1946]. These were some of the first systematically paid out allowances in the world for

large families. A new system of allowances for large families was introduced in 1944 and was revised in 1947.

The role of demographic prognoses in long-term socio-economic planning was noted at the 24th Congress of the CPSU. In the decisions of the congress provisions were made for the introduction of a system of allowances for economically underprivileged families (basically families with many children) and a number of privileges for people working in the northern and eastern regions of the country, which had a positive effect on population migration to those regions of the country. Finally, in the new Constitution of the USSR (Articles 35 and 53) special mention is made of the important role of motherhood and the stability of the family in the value system of our society, and active state assistance to the family is guaranteed. The 25th CPSU Congress adopted a decision to grant women partially paid 1-year maternity leaves, which will be introduced throughout the rayons of the country beginning in 1981.

Measures for reducing the sickness and mortality rate of the population represented an important direction in the systematic social effect on demographic phenomena. In this respect measures with a purposeful effect were literally carried out from the very first days of Soviet power. The resolution of the CPSU Central Committee and the USSR Council of Ministers on the further development of health care, adopted in September 1977, is also to a great degree a part of the systematic effect of a developed socialist society on population development.

However, the 25th CPSU Congress approached the resolution of population problems at a qualitatively different level: it posed the question of working out an effective demographic policy, on the whole, that is, a system of measures expressly aimed at achieving a definite result with a high degree of effectiveness with respect to administrative actions. Let us also note that here we are concerned with measures of a systematic social effect on the whole system of demographic processes in their interdependence and not just on this or that form of population movement.

Such a qualitatively new approach to administrative problems, that is, a planned effect for the purpose of changing demographic phenomena in a direction necessary to society, reflects the objective requirements of our society and is based on realistic opportunities.

At the present level of economic development in our country long-term socio-economic planning is acquiring ever greater significance; particularly long-term when development trends of a long duration with respect to this or that component of such a complex social system as society and the revision of undesirable tendencies appearing in the course of social development play such a special role.

But any administration of the complex system, especially such a multifunctional system as a mature socialist society, can only be effective when specific measures are provided for in order to manage each element of the system along with a definite and unified social goal. Not one component of such a system, demographic processes in this instance, should be left outside of the sphere of a purposeful effect, not even outside of a dependence on the development trends of this or that process. The peculiarities of a demographic situation can only increase the urgency of carrying out an effective demographic policy.

The implementation of the basic economic law of a socialist society and improving the efficiency of the way in which our whole economy functions are the main criteria for the effective operation of our whole social policy, including its component -- a demographic policy. Demographic policy questions should also be resolved in conformity with these basic criteria while taking into account the social and economic aspects of development in society. The correlation between the elements of the whole system and the measures for administering them is a complex, sometimes debatable, but theoretically and practically very important problem[2]. Thus the necessity of working out an effective demographic policy is dictated by the long-term interests of the development of our society.

But also important is another aspect of this problem, which is that the scientific-theoretical prerequisites for resolving this problem have now been formed. It is known that the scientific elaboration of the population problem, which was suspended in our country on the eve of World War II, was noticeably activated after the publication of the article "On Two Forgotten Areas of Sociological Research"[3] in the journal KOMMUNIST. In the middle of the 1960's organizational form was given to two demographic scientific centers in Moscow (Department of Demography in the USSR NII TsSU [Scientific Research Institute of the Central Statistical Administration] and Center for the Study of Population Problems in the Economic Department of MGU [Moscow State University imeni M. V. Lomonosov]) and one in Kiev (Department of Demography in the Institute of Economics of the UkSSR AN [Academy of Sciences]). Somewhat later the Population Problems Laboratory was opened up in the University of Tashkent. Conferences and symposiums on various aspects of population studies became a reality, the volume of demographic literature increased[4].

Research on population problems in the first years after the war was conducted, on the whole, by political economists. Bourgeois theories on population development were subjected to severe criticism, and attempts were also made to formulate a socialist law of human population. Beginning in the middle of the 1960's theoretical and applied research on demographic problems characteristic of the USSR, on the whole, and the Union republics underwent very active development. After the creation of an editorial department of demographic literature in the izdatel'stvo [publishing house] "Statistika" the volume of demographic publications and their subjects were expanded significantly.

The research conducted in the last few decades has formed a scientific-theoretical base for working out a system of measures for the administration of population development. It is comprised of an overall approach to the study of the processes of development, which is based on a conception of the system of knowledge concerning population. The way for such an approach was paved by the fundamental works of Soviet demographers on an analysis of long-term population development trends in the USSR and also by works in the area of improving the methodology and the system of demographic analysis and prognosis.

The informational base of demographic research has also been expanded considerably in recent years, the 1959, 1970, and 1979 population censuses provided much valuable material not only for an analysis of trends in demographic processes, but also for revealing their motivational factors. In this respect the 1979 census acquires considerable significance. In fact, this census for the first time (since 1926) provides us with information on the level of the birth rate according to cohorts[5].

In the last few decades our country has conducted a large number of various demographic studies, which have made it possible to obtain detailed and sometimes unique information.

The study of the motivational factors behind the decision of a couple to remain childless or to have children represents an important direction in demographic research, which is of considerable importance in working out the problems of administering demographic processes. Another important factor is an analysis of the mechanism of the interrelationship between economic and demographic processes at various stages of development in the country and of the effect of changes in this or that element of the standard of living on the intensiveness of demographic processes. An identification of trends in the dynamics of these relationships is an important condition for working out the whole structure of effective economic measures in a demographic policy. This type of demographic research underwent considerable (however, still insufficient) development in the 10th Five-Year Plan in the work of many Soviet scholars.

Finally, a detailed familiarity with theoretical research and the large amount of practical experience accumulated in this area in the socialist countries of Europe was an important prerequisite for the success of research in the area of demographic policy in our country. A study of this experience made it possible to identify many common traits in the course of demographic development and to generalize measures for an effective demographic policy in a socialist society.

A number of works on problems of managing demographic development and on demographic policy have been published in recent years[6]. Among them two collective monographs especially devoted to these problems should be singled out[7]. A number of works by B. Ts. Urlanis are devoted to the problems of demographic policy, questions of the theory of the economics and politics of human population are researched in the works by D. I. Valentey.

The problems of managing population development and demographic policy have been discussed at a number of seminars and conferences. Among them in recent years it is possible to single out the All-Union School-Seminar on Questions of Managing Demographic Processes, held in May 1979, and the Conference of the Council on Socio-Economic Problems of Population Development of the USSR AN, held in June 1979.

And still we cannot say that the same high level has been achieved in the area of the study of demographic policy problems as, for example, in the development of methods of demographic analysis. A number of these questions remain poorly studied, for example: the determination of the effectiveness of a demographic policy, the correlation of its "vertical" and "horizontal" levels, the opportunities of society in the utilization of these or other measures under current conditions, and many other aspects.

At the same time the urgency of resolving these problems increases from year to year. Confirmation of this can be found in the most recent party documents. Thus not only is the importance of expanding demographic research noted in the draft of "The basic directions of economic and social development in the USSR for the years 1980 --1985 and for the period until 1990", but concrete tasks are also established, the accomplishment of which would require the implementation of an

effective demographic policy: the strengthening of the family, the creation of more favorable conditions for combining female participation in the labor force with the functions of motherhood, increased life expectency, and many others. Thus research on the problems of a demographic policy in our country is a vital requirement of theory and practice.

To a great degree present work amounts to a development of the theses contained in the book "Problemy economiko-demograficheskogo razvitiya SSSR"[8] [Problems of Economic-Demographic Development in the USSR]. Its structure is determined by a general approach to the management of socio-economic processes, which includes such elements as determining the state of the subject being managed at the time management actions begin; determining the goal of such actions, that is, that state of the system being managed which the actual state should approach; a selection of management methods and, finally, a determination of a system for controlling changes in the system being managed[9].

In accordance with our objective the management process is made up of the following elements: a study of the general trends of population development and their specific traits under the conditions of the country as a whole as well as its individual regions; a determination of the present state of demographic development as an initial base of management; a determination of the goal of a demographic policy -- those parameters of population reproduction which from the positions of the criteria selected are the most preferable with respect to long-term propects; an elaboration of a comprehensive system of measures for a demographic policy; finally, an elaboration of a system for controlling changes in the state of the system being managed. To a great degree the latter is limited to an improvement of the methods of demographic analysis and, therefore, will not be examined in this work.

Such an overall nature of research predetermined its fragmentary nature and, most likely, the far from always intensive elaboration of a number of demographic policy problems. Questions of demographic policy with respect to migration, in particular, are in need of special examination because of their specificity. It is hoped that this work will make at least a minimal contribution to working out such a complex and urgent problem as an effective demographic policy in the USSR.

The recommendations of Professor D. I. Valentey and Professor L. L. Rybakovskiy, and also the assistance of Ye. S. Bol'shakova were extremely valuable in the preparation of this book. The author is profoundly grateful to all of them.

FOOTNOTES

1. "Materialy XXV S"yezda KPSS" [Materials on the 25th CPSU Congress], Moscow, 1976, p 73.

2. We regard demographic policy as a part of population policy, which, in turn, is a part of the socio-economic policy of society as a whole (see.: "Sistema znaniy o narodonaselenii" [System of Knowledge on Human Population]/edited by D. I. Valentey, Moscow, 1976, chapter IX). In this work we will only examine problems related to demographic policy.

3. KOMMUNIST, 1964, No 17.

4. Our task includes a study of the history of demographic research in our country during the postwar period, this is the subject of a special work, the writing of which is extremely urgent.

5. At the time this book was released for printing there were still no detailed publications on the results of the 1979 census, but it is possible to assume that the question asked by census takers concerning the number of children in a family in combination with a detailed description of the condition of the family will provided a wealth of material for subsequent research.

6. According to the data of the reference book "Bibliografiya po problemam narodonaseleniya" [Bibliography on Problems of Human Population] for the years 1972--1975, (Moscow, 1977) 24 works on the problems of human population policy were published during this period in the USSR. One of these publications -- the collection "Demograficheskaya politika" [Demographic Policy] -- contains 22 articles by various authors, that is, the total number of publications amounts to 46 titles.

7. See.: "Demograficheskaya politika"/edited by V. S. Steshenko and V. P. Piskunov, Moscow, 1974; "Upravleniye razvitiyem narodonaseleniya SSSR" [Administration of Human Population Development in the USSR]/edited by A. Ya. Kvasha, Moscow, 1977.

8. See.: A. Ya. Kvasha, "Problemy ekonomiko-demograficheskogo razvitiya SSSR", [Problems of the Economic-Demographic Development of the USSR], Moscow, 1974.

9. See.: "Matematika i kibernetika v ekonomike" [Mathematics and Cybernetics in economics], Dictionary-Handbook, Moscow, 1975, pp 592--597.

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Aleksandr Yakovlevich Kvasha

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DEMOGRAPHY

BOOK DISCUSSES MANPOWER SHORTAGE, ALCOHOLISM

Moscow RAZVITIYE NARODONASELENIYA: EKONOMICHESKIY ASPEKT in Russian 1980 (signed to press 1 Feb 80) pp 169-220, 311-333

[Sections of Chapters 2 and 3 from book "Population Growth: The Economic Aspect" by M. Ya. Sonin, Economics Institute of the USSR Academy of Sciences, Izdatel'stvo "Statisika", 5,000 copies, 351 pages]

[Excerpts] Chapter 2. Problems of Reproduction of Labor Resources

Problems of Distribution and Use of Labor Resources*

In the report address of the CPSU Central Committee to the 25th party congress and his speech at the October (1976) Plenum of the CPSU Central Committee, Comrade L. I. Brezhnev, general secretary of the CPSU Central Committee, especially emphasized the need to pay more attention to optimum use of labor resources. This was prompted by exacerbation of the problem of labor resources, by the shortage of trained workers. The shortage of workers in the most common occupations is being felt with particular acuteness in the country's major industrial centers. The present strain on the balance of labor resources is explained by the fact that for a long time a substantial share of the growth of the social product was achieved by increasing the work force and by augmenting the volume of capital construction. In a number of cases an excessively high need for personnel was created because of low efficiency in their use (large losses of work time, interruptions of work activity because of personnel turnover, and so on), as well as because of the unsatisfactory state of affairs in capital construction (excessively high volume of construction and number of projects under construction, unwise distribution of capital investments between new construction and reconstruction of existing enterprises).

In accordance with the decisions of the 24th and 25th CPSU congresses, emphasis has now been placed on qualitative and intensive factors of economic growth, on raising the efficiency of social production. More optimum distribution and use

* Printed in abridged form from the publication: SOTSIALISTICHESKIY TRUD, No 3, 1977; additional material taken from the article "Effective Use of Labor Resources" (EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA, No 4, 1977, Novosibirsk) was used in this section.

of the country's labor resources, which ultimately take the form of a rise of labor productivity, are assuming extremely great importance among those factors. Speeding up the rates of scientific-technical progress, developing progressive lines of scientific research and reducing the time required to apply their results to production are helping to reduce heavy physical labor step by step and to replace unskilled manual labor by machine labor. Intensification of production has put on the agenda the improvement of the system of planning and extensive use of the economic mechanism for stimulation of production, and enhancement of the motivation of enterprises and production associations to achieve a growth in output without increasing the size of the work force. This complicated task can be performed on the basis of the socialist competition, which has been staged on a broad scale in response to the appeal of the CPSU Central Committee, for ahead-of-schedule fulfillment and overfulfillment of state assignments by every producer and collective at minimum material costs and labor expenditures, for bringing stragglers up to the level of frontrankers, for broad introduction of better work methods, for expansion of the movement to master related occupations, and for application of scientific management at every work station.

On the Shortage of Manpower, Its Causes and Consequences

By contrast with the entire previous period, when the annual natural increase of the able-bodied population (the positive difference between the number of young people coming of working age and the number of people retiring) was the highest over the entire postwar period, in the second half of this 5-year period we enter a zone when the natural growth of labor resources will drop sharply. The number of young people entering the able-bodied population every year will be between one-third and one-half of what it is at the present time; the number of people retiring will be far greater. In coming years the age-specific composition of the able-bodied population will change essentially, and in this two tendencies are clearly evident--reduction of the share of young people (the 16-24 age group) and an increase in the relative share of people in the preretirement age groups.

In connection with these processes one must have a clear idea of the state of the manpower supply and of the causes and consequences of a manpower shortage even now under present conditions. At the present time the manpower shortage is having a very substantial impact on rates of economic development.

The impact of the manpower shortage on production efficiency is indicated, for example, by the fact that more than one-fifth of cases of downtime lasting at least one shift in the metal manufacturing industry occurred because of understaffing. This has been especially manifested in the major cities--Moscow, Leningrad, Kiev, etc. Often a low level of utilization of equipment and a slowing down of the growth rates of production are observed at enterprises.

The manpower shortage is one of the reasons of labor turnover, whose results include losses of work time during transition from one job to another, higher material costs of enterprises and of society as a whole for the training and retraining of personnel changing jobs frequently, and lower labor productivity (a

drop of 10-20 percent during the 2 or 3 months after the move is made to another job) as compared to permanent personnel. Labor turnover in industry and construction is at present dropping very slowly. At industrial enterprises it still remains at a substantial level, and it is particularly high in construction.

The manpower shortage is also having an adverse effect on the state of work discipline, which is related to the organization of work and consequently to its productivity as well. It is a necessary condition of scientific management that all job slots be filled with qualified personnel. The turnover of personnel and breaches of discipline are related to use of work time above all.

Losses of work time because of breaches of work discipline are underestimated in official reports of individual enterprises. Work time losses of less than one shift, which as a rule exceed by 3-4-fold full-day losses, are especially important. Part-shift downtime as recorded on "downtime slips" does not reflect the actual situation. The same can be said of sample time studies of the workday which enterprises conduct annually with their own resources. They are first of all organized in the last 10 days of October, i.e., in the particularly strenuous period just before the holidays, and they furnish fragmentary figures which are too low on the average level of part-shift downtime. Sample surveys conducted by scientific research organizations provide a more accurate idea of the actual losses of work time. According to the data of such surveys, at a number of industrial enterprises these losses amount to as much as 15-20 percent of all work time, while in construction they are still higher. In branches of the service sphere no specific records are kept on work time. One can judge from the table how sizable the differences are between the losses formally recorded and actual work time losses.

Part-Shift Losses of Work Time Relative to Time Worked, in percentage

Enterprises (Kuybyshevskaya Oblast)	According to Data of Time Studies of Workday	According to Data of Annual Statistical Reports
Sergiyevskneft' oil field administration	5.9	None
Ninth gas refining plant	6.0	0.11
Syzran'sel'mash	5.4	0.02

The reasons for full-day and part-shift losses of work time vary widely. They include equipment breakdown and the lack of parts, workpieces, attachments, materials-handling equipment, and shortcomings in planning, in material and technical supply, and so on. Of course, all these factors do not depend directly on the state of work discipline in the given production section. But if we follow the entire "chain" of these causes related to organizational and technical maladjustments in the given production, then we will soon become convinced that in the final analysis they also result to a considerable extent from a breach of work discipline.

The extremely rapid growth of those employed, far in excess of the natural growth of labor resources, has caused serious difficulties. We should bear in mind in this connection that the national economy has been attaining manpower not only from the natural growth (young people reaching working age), but also from persons who have retired as well as from the able-bodied population previously employed in the home. By 1970 the work force in social production (in kolkhozes and full-time studies) had reached more than 90 percent of all persons of working age, as against 78 percent in 1960 and 87 percent in 1965. In certain major cities and regions of the country labor force participation has risen to 95 percent.

What are the main reasons for the shortage of manpower, and what are the ways of eliminating it?

The principal cause, in our view, is the lack of equipment for retooling production in certain sectors. For a long time a sizable portion of resources were committed to building new enterprises, and for that reason it was not always possible to reequip existing enterprises and carry out mechanization more extensively, and that brought about a shortage of manpower. The principal direction, then, as noted by the decisions of the 25th CPSU Congress, is to sharply reduce the relative share of new construction and to redistribute resources to the advantage of technical modernization of existing enterprises, as well as to develop first of all those branches of machinebuilding which build machines and equipment that replace heavy manual labor.

Consequently, a substantial rise in the efficiency of utilization of labor resources presupposes implementation of a set of technical, organizational and socioeconomic measures. It is decisively important here to step up the growth rate of labor productivity and thereby to make manpower available from existing production, and above all to reduce the number of workers employed at manual and heavy physical labor.

The potential here for making labor resources available is enormous, since the share of manual labor is dropping slowly in all sectors of the economy. In 1965 the share of workers performing operations by hand was 49.7 percent in industry and 72.3 percent in construction, and in 1972 these figures were 55.7 [sic] and 65.8 percent, respectively. Because of slowness in reducing the use of manual labor, though its relative share did decrease, at the same time the absolute amount of manual labor increased over that period. More than half of workers in construction and installation work are performing manual operations: 55 percent in construction organizations of USSR Minpromstroy [Ministry of Industrial Construction], 54 percent of USSR Minstroy [Ministry of Construction], and 66 percent of USSR Minsel'khozstroy [Ministry of Rural Construction]. In industry manual labor is concentrated mainly in machinebuilding and metal manufacturing, in light industry and the food manufacturing industry, in coal mining, in timbering, which account for about 80 percent of all the manual labor in the industrial sector. Those doing heavy physical labor represent 36.5 percent of all those doing manual labor.

Because of insufficient specialization and an inadequate supply of equipment, the number of workers doing manual labor is extremely high (74 percent) in auxiliary production operations: in transport, freight-handling and warehouse operations, in repair of equipment, in tooling management, etc. For example, the number of workers employed in loading, unloading, lifting and moving operations and in the transport of freight reached 7 million persons in all sectors of the economy (except kolkhozes) in 1975, which was 900,000 persons more than in 1965. In industry the share of this group of workers was 14 percent in 1975, including 25 percent at enterprises (mines) of Minugleprom [Ministry of Coal Industry], 15 in Mintyazhmash [Ministry of Heavy and Transport Machinebuilding], 12 in Minsel'khozmash [Ministry of Tractor and Agricultural Machinebuilding], 14 in Minstroydormash [Ministry of Construction, Road and Municipal Machinebuilding], 27 in Minstroymaterialov [Ministry of Construction Materials Industry], and 17 percent in Minpishcheprom [Ministry of Food Industry]. The relative share of auxiliary personnel in the total work force of the industrial sector was 46 percent in 1965, while in 1975 it had risen to 49 percent.

Measures aimed at scientific management assume tremendous socioeconomic importance in the area of solving the problem of labor resources. But in drafting proposed plans for adoption of the most important NOT [scientific management] measures for the 10th Five-Year Plan and for 1977 ministries and departments of the USSR and of the union republics have in a number of cases adopted figures which are too low for the rise of labor productivity resulting from application of NOT measures if a comparison is made to the actual results for the 1971-1975 period. For instance, at enterprises of Minsel'khozmash the rise of labor productivity to result from application of NOT measures in the 1976-1980 period was set at 3.5 percent, as against 4.8 percent planned in the Ninth Five-Year Plan; at enterprises of Mintsvetmet [Ministry of Nonferrous Metallurgy] the drop was from 7.2 to 4.3 percent, in Minbumprom [Ministry of Timber, Pulp and Paper, and Wood Processing Industry] from 6.2 to 4.8, in Minkhimmash [Ministry of Chemical and Petroleum Machinebuilding] from 9.1 to 8.1, in Minstroydormash from 7.4 to 6.5, and in Minpishcheprom from 7 to 6 percent.

Yet it is scientific management, which also includes the designing of work stations in the construction and reconstruction of enterprises and when new machines and equipment are being created, as we know, that is an important prerequisite of the rise of labor productivity, of shortening the time for attaining rated capacity, and of improving other economic indicators. If the main lines of scientific management are competently dealt with in engineering plans, far higher labor productivity will be ensured, and the designed labor intensiveness of the product will be achieved more rapidly. For example, in working out the engineering plans for the varnishes shop in connection with reconstruction of the Cherkessk Chemical Plant, the NOT Center of Minkhimprom [Ministry of Chemical Industry] reduced the number of personnel needed by 46 percent compared with progressive shops of the same kind in operation, by improving the organization of work and the positioning of personnel.

According to figures of SKB-3 [Special Design Office] of Minavtoprom [Ministry of Automotive Industry], project plans worked out for organization of labor and management of production guarantee that labor productivity, compared to existing

shops, will be 10-25 percent higher in the basic shops of volume production, 40-50 percent in shops with series production, and twofold higher in shops with single-unit production and auxiliary shops.

But many project planning organizations do not attribute due importance to scientific management. A check has shown that 8 out of 13 institutes prepare project plans in which there is no separate section devoted to the organization of work (Giprostanok [State Institute for the Planning of Machine Tool, Tool and Abrasives Plants and Forging-and-Pressing Machinery Plants] of Minstankoprom [Ministry of Machine Tool and Tool Building Industry], Rezinoproyekt [State Institute for the Planning of Establishments of the Rubber Industry] of Minneftekhimprom [Ministry of Petroleum Refining and Petrochemical Industry], Giproplast [State Institute for the Planning of Establishments Producing Finished and Semi-finished Plastic Products] of Minkhimprom, etc.).

On Improving the System for Releasing and Redistributing Manpower

Enhancement of the role of the intensive form of manpower utilization in connection with the progressive reorganization of the sectoral structure of our country's economy is making it objectively possible and necessary to improve the system for redistribution of personnel to fill job slots with people made available as the result of technical progress, reconstruction, organizational-and-technical restructuring and other measures directly or indirectly related to introduction of scientific management.

Up until now the job placement of those made available by technical progress has mainly been effected through intraplant redistribution. The predominant form of retraining workers has been retraining them primarily for related occupations within the same field within the enterprise, mainly in the form of short-term individual and team training in second or new occupations, as well as through training in evening (shift) vocational and technical schools. This system of retraining took shape at a time when the amount of manpower being made available within the enterprise was still extremely negligible.

At the present time the economic and organizational-legal prerequisites have come about for interplant redistribution of workers made available. It seems to us that their disengagement should be carried out in a planned way and should be organized.

In that context the experience of Minchermet [Ministry of Ferrous Metallurgy] in giving enterprises targets for the absolute number of workers released by performance of organizational and technical measures, auxiliary workers and administrative and managerial personnel above all, deserves to be studied and disseminated. In the 1971-1975 period the total number of production personnel proper related to the rise of labor productivity of enterprises of that ministry was more than 350,000 persons, including 207,000 actually disengaged and transferred to other sections of production, 180,000 of them in turn used to staff new projects. The entire growth of the volume of production in the Ninth Five-Year Plan for the USSR Minchermet was achieved by virtue of the rise of labor productivity. In the 10th Five-Year Plan 159,500 persons belonging to production personnel proper are to be released according to the target assigned.

Timely preparations need to be made for the process of organized and large-scale redistribution of manpower; otherwise such painful things as reduced wages, periods without work, unreasonable geographic moves, and so on, are inevitable. It is advisable in this connection to set up a system of manpower reserves and planned redistribution of manpower. As L. I. Brezhnev has pointed out, "a situation needs to be achieved in which the equipment does not stand idle waiting for personnel...."*

The qualitative composition of the workers to be made available and who can be redistributed in coming years is characterized by a high relative share of auxiliary workers performing unskilled labor, i.e., those groups whose subsequent use in social production requires retraining and improvement of qualifications. In the more remote future the workers made available will show a higher absolute number and share of basic workers with secondary qualifications (lathe operators, milling machine operators, heat treaters, drill press operators), as well as engineering and technical personnel and employees (because of reorganization of the structure of administration involving extensive use of ASU [computerized management systems]). Accountants, bookkeepers, and so on will be released and transferred to other work.

We should mention that in the industrial sector alone there are more than 2 million stevedores, carriers and materials handlers and helpers who do their work mainly by hand. There are 2.5 million persons employed in labor-intensive operations in the repair of equipment and more than 1 million persons in technical inspection. The question is this: How is their redistribution to be organized?

Redistribution of manpower may be internal and external. The latter might include, for example, use of personnel made available at industrial enterprises, in construction organizations, and so on, because of introduction of NOT. In this case the workers are transferred from certain production sections (shops and the like) to others within the enterprise. We would classify among external forms of redistribution that portion of labor resources which is made available as a result of technical progress, involving greater mobility than the reassignment from one job to another within the enterprise, and involving redistribution beyond the confines of a given enterprise--where the need for trained personnel arises. Higher "vertical" and "horizontal" mobility (i.e., possibility of moving from one sector to another and one place to another) is an important distinctive feature of external redistribution of manpower.

When manpower becomes a factor that sets a limit on the growth rates of production, external release of workers in certain labor-intensive sections of production and their redistribution from one enterprise or sector to another in the national economy take on greater socioeconomic importance. This pattern must satisfy the bulk of the manpower requirement of new industrial enterprises. The reason for this is that the total work force in most branches of the industrial sector will not increase. At the present time external redistribution is mostly taking place haphazardly, through personnel turnover.

* L. I. Brezhnev, "Leninskim kursom" [On Lenin's Course], Vol 2, Moscow, 1970, p 502.

The following can be designated as the principal directions for the planned release and external distribution of manpower: from agriculture as labor productivity rises to nonfarm branches of material production; from extractive branches to manufacturing branches within industry; from the production to the nonproduction sphere; from the densely populated regions of the European part of the USSR to the sparsely settled regions of Siberia and the Far East. Improved planning of the redistribution of manpower has great national economic importance in the present stage.

Personnel for New Enterprises

On the whole it would be difficult to say that the situation with attainment of rated capacity at new industrial enterprises is satisfactory. The average time required is all of 4 years. Sample surveys conducted by TsSU SSSR [USSR Statistical Administration] in 1974 showed that 1,294 out of 2,211 enterprises (58.5 percent; as compared to 67.2 percent in 1964) had not attained rated capacity within the period allowed. Still longer periods are required to attain the principal economic indicators of the design--labor productivity, production cost and profitability.

Temporary quotas and the failure to revise the quota system probably are one of the reasons for this. The experience of advanced enterprises (the Minsk, Gor'kiy and Volga motor vehicle plants, the Minsk Refrigerator Plant, the Tiraspol' Cotton Combine) shows that when products are being put into production or when new technology is being assimilated the adoption of technically sound design quotas, combined with simultaneous establishment of temporary supplements to wage rates which decrease as the design quotas are achieved and are altogether discontinued when rated labor intensiveness is attained, helps to reduce the time required to reach rated output and to attain the economic indicators given in the design. Thanks to this system of quota setting and remuneration and to organizational and technical measures rated labor intensiveness, for example, of the GAZ-24 "Volga" automobile was achieved in 13 months at the Gor'kiy Motor Vehicle Plant, while that of the GAZ-21 "Pobeda" automobile was attained only 7 years after it was put into production. The Rostsel'mash [agricultural machines] Plant attained rated labor intensiveness on the SK-5 "Niva" combine in 3 years, whereas more than 10 years were required for the SK-4.

But this system of quota setting and organization of work has still not become widespread. In the 1972-1974 period ministries were ordered to draft sectorwide methods recommendations and criteria for setting work quotas for workers during the initial period of a new production operation. But so far many ministries and departments have still not completed preparation of these materials.

In spite of the large scale of new capacities being activated every year, a system has not yet been created for timely targeted training of skilled workers for new industrial enterprises. Every year several hundred new major industrial enterprises and installations are put into operation, requiring approximately 500,000-600,000 new workers by the time they open up.

Yet planning agencies and economic authorities as a rule do not have comprehensive calendar plans for the training of personnel. As a result enterprises which are new construction are experiencing a large shortage of operating personnel. For instance, the synthetic alcohol operation in the production association Nitron (Saratov) was short 1,400 workers when it went into operation, and the Krasnoyarsk Chemical Fiber Plant 1,000. Staffing in the production association Azot in Navoi when it went into operation was 90 percent of engineering and technical personnel and 78 percent of worker personnel; the respective figures for the Sumgait Superphosphate Plant were 92 percent and 26 percent, respectively.

A disproportion thus arises: A new industrial enterprise with progressive and sophisticated technology is put into operation, elements of haphazardness and lack of organization (recruitment off the street) are predominant in shaping the production staff of this facility, and this has the most adverse impact on the pace at which rated capacity is attained at new projects. It is evident from an analysis of balances of skilled workers of newly built industrial enterprises that about 80 percent of the workers are recruited by the enterprises themselves.

Progress in present-day industrial technology and the extent of introduction of full automation and mechanization of production at new enterprises necessitate the training and formation of a new type of worker who has a high level of general education and a high level of specialized training. For instance, in machinebuilding the need for workers in the high-skill categories is 15-25 percent of the total work force, while in the chemical industry it goes up to 50 percent.

It is advisable for targeted training to be done through the facilities of educational institutions in the system of vocational and technical education, and especially, as emphasized in the decisions of the 25th CPSU Congress, in schools furnishing secondary education along with skills.

There is a need for considerable expansion of the network of educational institutions for targeted training of workers for new industrial enterprises. Ways that can be proposed: first, mandatory provision for construction of vocational and technical schools at a faster pace than the principal project so that the students would complete their training at the moment when the principal manufacturing equipment is installed, the outlays for construction of these educational institutions to be incorporated in plans and cost estimates; second, other forms of worker training now in effect must be retained and developed as well.

Workers doing jobs requiring little skill and also those of the unsophisticated occupations and those in narrowly specialized occupations should be trained at enterprises, more extensive use being made of existing vocational and technical schools and two-shift training.

The measures enumerated above, of course, require corresponding outlays. But the benefit to the national economy from speedier attainment of rated output at new industrial projects and from a shorter payoff period for capital investments is immeasurably greater than those costs.

The Need To Improve the Compilation and Fulfillment of Manpower Balances

The economic system of the country of advanced socialism possesses a number of extremely important advantages over capitalistic countries. Utilizing these advantages, the Soviet state and Communist Party have in all stages of building socialism been solving the problems of meeting the manpower needs of a growing economy without a reserve army of labor--the unemployed, that inevitable result of capitalism.

The principal advantage of the socialist economic system is that the planned character of the Soviet economy affords the possibility of accurately reckoning the economy's need for manpower, of training new personnel in the necessary number, of distributing them at the end of training in accordance with the plan (as the reserve of the state) among the various sectors and among the country's various regions. But these advantages are still not being sufficiently utilized. In our opinion, attention should be turned to practical solutions of the problems, and linkages should be set up between these two parts of the manpower balance--the need for manpower and its supply.

The right tc work has been achieved in the USSR, and there is no unemployment; all manpower is fully utilized in the continuously expanding economy or in the sectors of cultural construction and administration. Thus no surplus of personnel can be created in the national economy as a whole. Nor should there be a shortage of manpower for the entire socialist economy taken as a whole, since the production plan is realistic only when it is backed up with the supply of personnel, and if labor resources are not sufficient for that, then the socialist state takes a number of steps to ensure that a portion of manpower is made available and redistributed. But those measures are not always taken in good time or in full measure. It is this that explains the absence of linkage (balance) between the need for personnel and possibilities for meeting that need in the required sectoral and regional mix in the very stage of compiling plans and to a still greater degree--in carrying them out. This applies above all to the balance of skilled personnel in capital construction.

As experience in achieving rated capacity when new enterprises are put into operation has shown, the shortage of trained personnel is in first place among the factors slowing down that attainment. In the current 5-year period, it seems to us, the shortage of manpower could be entirely eliminated, above all by balancing the activation of new capacities and the supply of their personnel by redistributing personnel from existing old enterprises to new ones by increasing the efficiency of utilization of workers at existing enterprises.

Thorough and careful compilation of retrospective and planned balances of labor resources from the macrolevel to the microlevel, i.e., for the country as a whole and by regions, will be needed to achieve balance between employment and optimum utilization of personnel, on the one hand, and the scale of social production on the other. Only by means of balances of this kind is it possible to determine the number of new jobs for each of the sectors of the economy in the planning period. Progressive standard amounts of specific capital investments per job are needed to link the planned balances of labor resources to the planning of capital investments; those standards must be differentiated so as to

take into account the distribution of capital investments (between new construction and reconstruction of existing enterprises) by sectors and regions of the country. Devising standard amounts of specific capital investments (or cost) per job is a task which scientific research institutes in the planning field are capable of performing. Relying on these standards it would be possible to determine the volume of capital investments so that it is consistent with the scale of employment within the region and the sector.

In planning capital investments for development of the various sectors of the economy it is important to take into account the trend and fluctuation of relationships between expenditures of past and live labor over several years. Technical progress brings about a progressive reduction in the share of inputs of live labor (as compared to past labor) in all sectors of the economy. This signifies a faster growth of the mass of means of labor than for the size of the work force. In this case we are talking about a potential relative reduction of employment, since as time passes a decreasing amount of manpower will have to be drawn into production, other conditions being equal, for one and the same amount of fixed capital being put into operation.

It is natural that the different sectors of the economy are characterized by a differing distribution of inputs of past, embodied and live labor and are divided into capital-intensive (for example, the chemical industry, metallurgy and the fuel and power industry) and labor-intensive (coal mining, mining, timber and lumber, and so on). The level of employment depends largely on which sector--capital-intensive or labor-intensive--capital investments are committed to. Selection of the optimum variant has great importance in planning the location of the productive forces among the country's economic regions. Location of labor-intensive sectors makes economic sense in regions where there is a reserve of labor resources, and, on the contrary, capital-intensive production operation should above all be developed in regions with a manpower shortage, and at the same time consideration should be given to the qualitative composition of manpower as a function of the specific nature of the branches of the industrial sector.

On Certain Aspects of Studying Patterns of Movement of the Population and of Demographic Policy*

It is particularly important to study the patterns of movement of the population, first, because in the context of socialism the population figures not only as an object, but also as a subject of economic policy as a whole, since the goal of our society's development is to meet the needs of man; second, because movement of the population and especially of labor resources, which determine possibilities for the further development of the economy, possesses inertia as compared to changes in the country's level of economic development. But it is the study of patterns of movement of the population that is the weakest area in our demography. This is especially manifested in forecasts of the size of the population, not only for the various regions of the country, but even for the country as a

* Reprinted from the publication "Demograficheskaya politika" [Demographic Policy], Moscow, 1974.

whole. We have to rely on forecasts of the size of the population in the initial stage of forecasting and planning development of the entire national economy. It is in that connection that we should examine the significance of demographic policy, to which more and more attention is being paid. And this is altogether understandable. In recent years there have been substantial changes in the flow of demographic processes. The birth rate in our country, especially in the union republics with the largest population (RSFSR, UkSSR, BSSR), has dropped considerably. Very substantial changes are also taking place in the character of other demographic processes. All of this is causing our society to pay serious attention to these problems. At the same time in recent years there have been no substantial changes at all in demographic policy itself (if indeed we can speak of it as a shaped policy). This must also disturb us.

According to that division of the dissemination of scientific knowledge, including its application, into time periods which has won greatest recognition, the entire process from the initial scientific discovery to its wide dissemination in society can be divided into four stages: 1--basic scientific research; 2--incubation period; 3--practical development; 4--dissemination.

Experience over many years has shown that it is in the third and fourth stages that numerous and the most complicated problems are encountered, problems which are causing great difficulties in applying scientific advances.

It would be a mistake in our view to suppose that this situation pertains exclusively to those fields of science which yield a materialized result in the form of new machines, equipment, materials and manufacturing processes. We are referring to the broader importance of scientific research, including the social and economic sciences, demography in particular. Practical application of scientific developments in this field is, of course, different in nature, but the task of increasing the effectiveness of scientific research through practical application of scientific advances has direct relevance to demography as well. The question, then, arises: What are the causes of insufficient practical utilization of a large number of scientific recommendations on the problems of demographic policy? One of the principal reasons, we are convinced, lies in the state of the science of demography itself, and especially in the fact that it still has been unable to discover the patterns of demographic development in our country.

Science as a whole, as a major sector of human activity, and demography, as one of its important branches, which have taken shape in the process of the social division of labor, display in their further development two principal forms of that division: specialization of labor and cooperation, or, put differently, differentiation and integration.

These two forms of the division of labor, like two poles of a magnet, are inseparable from one another. And therefore, the stronger the process of division of labor is manifested in the form of specialization, the stronger the process of cooperation in labor must also be achieved. In science this is concretely expressed in the differentiation of branches and subbranches and, simultaneously, in the development of integration, in the creation of interdisciplinary fields

of science. In the present century--the century of the scientific-technical revolution--the development of science and its practical application have experienced an unusual acceleration. And that is why new branches of science are budding out faster and faster from one another, striving at a fast pace to become independent. But at the same time the laws of development of society and of science itself require that connections be maintained between the old and new fields of science and create the possibilities for that.

Development of demographic science became possible thanks to creation of a certain interrelated set of conditions which can mainly be reduced to three: 1) the gathering of facts (or what can be called creation of the nutrient medium); 2) development of related sciences; 3) the economic and social need for development of a given science (we might mention F. Engels' statement to the effect that economic need drives the development of science faster than hundreds of university professors). The nutrient medium of the science of demography has down through the centuries been statistics, but the gathering of facts, i.e., of demographic data, is still inadequate for discovering the laws of movement of the population.

Facts are the "life breath" of science. But, just in the case of development of a living creature, it needs more than "air" alone for its development. The birth and development of a socialist demography required a certain level of development of philosophy, of Marxist political economy and of a number of other "older" sciences, such as geography and history, for example. But up to a certain period, even though these conditions did exist, a number of subjective factors would not allow the economic and social needs of society, which had already developed, to manifest themselves with sufficient persistence in the field of demography. It is now becoming a most important task of present-day demography, which uses specific methods of studying population as a socioeconomic phenomenon, to study not only the general patterns of the movement of the population, but also their quantitative expression.

Although many works have been written on the patterns of movement of the population and on the law of population, not only have the basic quantitative dependences of demographic phenomena not yet been formulated, but there is not even a reliable qualitative assessment of the factors of movement of the population, and therefore we are unable to fully take into account and utilize the requirements of the laws of demographic development. And without that it is impossible to define the theoretical and practical tasks of demographic policy.

The proposition advanced by V. I. Lenin to the effect that reproduction of the population is determined by material, economic factors, is now confirmed by the results of a huge number of contemporary studies of the factors of the birth rate, the marriage rate and other aspects of reproduction of the population. But the principles of K. Marx quoted above on the question of the patterns of movement of the population and those of V. I. Lenin elaborating them have in recent years been in essence set up by many economists and demographers in opposition to various aspects of movement of the population: the first to the problem of employment, and the second and third to reproduction of the population. Typical of such a point of view is that of T. N. Medvedeva, who believes that "the

economic law of population and the laws of population growth, i.e., the laws of reproduction, express altogether /different processes/ (emphasis mine--M. S.); the first expresses the social form and level of utilization of the able-bodied population in social production; the latter characterize a certain type of reproduction of the population, the rates of its growth in different socioeconomic conditions, which depend directly not only on production relations, but also on a broader range of factors which are not only economic, but also political, cultural, and psychological, as well as factors pertaining to the family and everyday life and even natural and biological factors. The first process is an economic one, and the second demographic."* It seems to us that advocating the position presented means denying the principle that the character and level of employment of the population, i.e., the principal condition and the source of resources for its (the population's) existence exert a decisive influence on the patterns of the natural movement of the population.

While denying the legitimacy of setting the economic law of population in opposition to demographic patterns and while emphasizing that changes in employment have a decisive importance to reproduction of the population, we should not forget the existence, along with the basic economic law of population, of partial laws as well that pertain to particular elements and aspects of reproduction of the population (birth rate, death rate, marriage rate, and so on) nor that the decisive importance of economic factors to reproduction of the population by no means signifies the exclusion of a whole number of psychological, cultural and other factors, including family life. This is indicated, to be specific, by the fact that sizable differences in the pattern of reproduction of population are observed between contiguous regions of the country where the level of economic development is approximately the same. The numerous studies, including surveys of women and families in the context of planned parenthood, are furnishing very contradictory data on the role of the various factors (adequacy of housing, material prosperity, and so on). For example, there can be no doubt that there is a profound interrelationship between demographic processes and solving the housing problem. It can moreover be said that the type of housing and housing supply are to a considerable degree determined by the laws of movement of population and that in turn the housing supply influences to some degree the formation of those laws. But the available data on the character and level of influence of housing conditions on the level of the birth rate are very contradictory. In the opinion of some scientists, the number of births decreases as housing conditions improve, while other researchers come to the opposite conclusion.

Conclusions are also very contradictory concerning the role of material prosperity. There are two basic points of view on this issue: some scientists feel that the rise in material prosperity is conducive to a rise in the birth rates; the other point of view (expressed most clearly by S. G. Strumilin, member of the academy) is that the rise of material prosperity operates in precisely the opposite direction. As for certain other important factors, there exist more generally recognized conceptions, for example, in assessment of the role of the employment of women in the sphere of social labor and the related change in woman's social role and social status as a factor operating in the direction of

* VESTNIK LGU, SER. EKONOMIKI, FILOSOFII I PRAVA, Vol 2, No 11, 1965, p 140.

reduction of the fertility rate. The woman, who once had little schooling, is now educated, once economically dependent, she has now become independent, economically self-sufficient, and once a housewife who had a low status, she has become an independent and skilled worker. The result of all this is that childbirth and the bringing up of children are playing an ever smaller role in women's lives. Between and among the individual factors in reproduction of the population there are interconnections which are not always obvious; that is, detecting them is most problematical for those who study these phenomena. It is apparently because of this complexity that such a fact as the birth rate, as the family's need for children, has been studied so very little.

This factor's interrelationship with other factors can in our opinion be examined only in the context of the law of rising needs advanced by K. Marx and elaborated by V. I. Lenin (see the chart)

Place of the Family's Need for Children Among the Other Socioeconomic Factors in the Various Stages of Development of the USSR (in the context of planned parenthood)

Ranking	1930's, first stage	1960's, second stage	Period of Completion of Construction of Advanced Socialist Society, third stage	Period of Communist Society, fourth stage
1	Need to work for the following reasons:			
	Source of subsistence (necessity) Social intercourse Comprehensive development of the personality	Source of subsistence (necessity) Social intercourse Comprehensive development of the personality	Social intercourse Source of subsistence (necessity) Comprehensive development of the personality	Comprehensive development of the personality Social intercourse Source of subsistence
2	Need for primary conditions of life, including:		Need for children:	Need for education, including:
	Food, clothing Housing Private transportation	Food, clothing Housing Private transportation (automobile and so on)	Perpetuation of the species Source of family joy and happiness Fulfillment of social duty	Higher education and scientific activity Secondary education: general and specialized

Table (continued)

Ranking	1930's, first stage	1960's, second stage	Period of Completion of Construction of Advanced Socialist Society, third stage	Period of Communist Society, fourth stage
3	Need for children:	Need for nonworking time, including free time, for the following:		
	Perpetuation of the species Material support in old age Source of family joy and happiness	Doing housework Rest and entertainment Hobby and creativity	Rest and entertainment Hobby Doing housework	Hobby and creativity Rest and entertainment Doing housework
4	Need for nonworking time, including free time, for the following: Doing housework Rest and entertainment Hobby and creativity	Need for education, including: Secondary, general and specialized Higher education and scientific activity Elementary and incomplete secondary education, including vocational training	Need for primary conditions of life, including: Housing Private transportation (automobile and so on) Food, clothing	Need for children: Perpetuation of the species Source of family joy and happiness Fulfillment of social duty
5	Need for education, including: Incomplete secondary, including vocational education Secondary education: general and specialized	Need for children: Perpetuation of the species Source of family joy and happiness Material support in old age	Need for education, including: Higher education and scientific activity Secondary: general and specialized	Need for primary conditions of life, including: Private transportation (automobile and so on) Housing Food, clothing

The chart represents an attempt to determine the hierarchy of the family's needs and the place which the need for children has among them. We consider it possible in principle, though as yet we are not making such an attempt, to quantitatively evaluate (in points on a scale) the importance of each need and the change of this hierarchy from one stage to the next. Since the chart is mainly methodological in nature, it is more correct to show only those stages which are characterized by substantial differences. The purpose of discovering the hierarchy of needs, including the need for children, is to obtain an answer to the question: What sort of needs and with what level of significance must be met before the family (in the context of planned parenthood) decides to have a child? Without prejudging the question of which child in order we are referring to, we are thinking as a rule of the "critical" case--the birth of the third child and subsequent children.

This chart is also convenient for a more thorough study of opinions in an investigation of the factors in the birth rate. In the few writings that do exist on this question, in particular the meaningful book of V. A. Belova and L. Ye. Darskiy,* a study of the reproductive principles in the stage of shaping the family and of opinions and family plans for parenthood does not contain a detailed analysis of the socioeconomic needs of the family for children.

This chart is in need of certain clarifications. The stages in the USSR's social and demographic development are given very provisionally. They do not coincide altogether with the assessment of the stages of the country's economic development that exists in our literature, since demographic development, as that process which has the highest inertia, as a rule lags behind social and economic development.

Five groups of social and economic factors determining the level of the birth rate in the family are proposed:

i. the need to work;

ii. the need for primary conditions of life;

iii. the family's need for children;

iv. the need for nonworking time, including free time;

v. the need for education.

These groups of needs persist in all stages of social and economic development, but in each of them the place of the family's need for children changes place relative to the other factors, and within the various groups of needs there is a change in the ranking of the particular subgroup as a function of its "weight" (significance). A change in the significance of the particular factor (i.e., their regrouping) also presupposes a change in the level of the birth rate,

* V. A. Belova and L. Ye. Darskiy, "Statistika mneniy v izuchenii pozhdayemosti" [Opinion Research in Studying the Birth Rate], Moscow, 1972.

which, we believe, can be forecast assuming this system is formalized to some extent: for example, by introducing a system of points on a scale both for each group of needs and also for each subgroup.

We will examine the two extreme stages--the first and fourth--as an example.

In the thirties, just as in communist society, the need to work is regarded as a basic condition for existence of each able-bodied member of society. But in the thirties work is a source of means of subsistence, that is, work by necessity, was that factor within this group that was first in significance. But in the period of the communist mode of production the primary factor in the need to work is comprehensive development of the personality as one, and moreover the most important, of the conditions for transforming labor into a primary vital need. This by no means signifies that the need to work as a source of means of subsistence has altogether disappeared. But there is no question that this aspect will not be dominant over the other aspects of work.

The second group of needs in the thirties was the need for primary conditions of life, first of all food and clothing, and then housing and private transportation.

Allowing for a certain amount of provisionality, and this indeed applies to evaluation of all the groups and subgroups, attention is obviously drawn here to the need for private transportation, or, more accurately, family transportation, as one of the primary needs. The reference is above all to the need for a means of the individual's reaching the place where he applies his labor. In subsequent stages the content of this need and the means of satisfying it are gradually transformed (the private means of transportation is used more and more in time that is free of work, retaining, however, its importance as one of the primary conditions of life).

In the fourth stage the entire group of needs referred to as the primary conditions of life still persist. But since satisfaction of the needs of the population for clothing, food and housing will be achieved at optimum levels in the previous stages, they have been put in second and third place here. Means of transportation move into first place; it provides not only for movement to the place where work is applied, but also the other movements which the family needs.

We advance the family's need for children as the most complicated and debatable group of needs. At first it might not seem altogether justified for this need to be in the third place in the first stage, though, as we know, those years were distinguished by the highest level of the birth rate. But we should emphasize that this entire chart presupposes planned parenthood, which in the thirties had a relatively small place in the overall birth rate. The division within this group is particularly debatable, since what would seem to be a biological need--the need to perpetuate the species--is put in first place. But as we understand it, perpetuation of the species has not only biological significance, but also social significance.

This chart reflects the author's subjective point of view concerning the character of planning parenthood and the significance of the factors determining the family's need for children. This point of view is based on theoretical generalization of the actual natural population movement, primarily in the largest regions of our country with a high share of urban population (RSFSR, UkSSR, BSSR). The low birth rates in the sixties and early seventies are mainly the result of the fact that the socioeconomic need for children has for a number of reasons dropped to one of the last places with young families. We can suppose that the period of completing an altogether advanced socialist society in our country will be characterized by a sharp rise in the significance of the family's need for children.

The need for children in communist society, as is evident from the chart, drops off once again, and within the group a new subgroup of factors--fulfillment of social duty--moves forward. In regarding this factor not only as a family duty, but also as a social duty, we have in mind the objective need and possibility of attaining the best correspondence between the demographic tasks of society as a whole and those of the individual family.

In the fourth stage the need for nonworking time, including free time, which assumes a qualitatively new character, advances into third place. Whereas in the thirties, when the system of public services was poorly developed, this need was determined more than anything else by time-consuming housework, under communism hobbies and creativity, as well as rest and entertainment move into the foreground.

The greatest transformation is in the need for education. Whereas in the first stage it was provisionally put in fifth place, in the fourth it moves into second. Moreover, in the thirties the predominant need was to obtain partial and complete secondary education, whereas in communist society it is transformed into the need for higher education and scientific activity.

We can take an analogous view of the change of [the other] needs in all stages. However, it seems to us, it is important to demonstrate only the methodological approach to the distribution of these groups of factors. This chart is only an attempt to find one of the methodological forms of forecasting trends of the birth rate, one that requires a comprehensive--not just qualitative, but also quantitative--estimation of the significance of each group and subgroup of needs which figure as factors determining the level of the birth rate.

In moving on to the question of demographic policy, we will attempt to compare differences among the numerous definitions available in the literature of the content of demographic policy.

In the strict sense demographic policy is regarded as performance of measures which can have a direct effect on the level of the birth rate, since at the present time it is the factor determining the natural population growth (with respect to the demographic situation in the USSR the reference is to the need to raise the level of the birth rate in a number of the country's regions). It can thus be said that in the strict sense of the word present-day demographic policy is viewed as a measure to stimulate the birth rate.

In a broader sense demographic policy includes all measures which can affect all demographic processes, not only directly, but also indirectly, in order to bring about desirable changes in them.

Through specific economic and social measures socioeconomic policy also has an impact on reproduction of the population (through formation of the family and so on). But only certain specific measures aimed at a more direct impact on reproduction of the population--for example, laws on abortion (allowing or prohibiting them), measures to stimulate the birth rate and development of a family (both by means of supplemental benefits to the family for children, and also with the help of taxes on those without children)--can be classified under the head of demographic policy. And there is hardly any basis for placing all socioeconomic measures that have an effect on movement of the population under the head of demographic policy.

What are the tasks of demographic policy in the present stage and in the future?

The process of social reproduction includes the reproduction not only of material elements, but also of man himself. His reproduction is one of the most complicated processes and is subject to the effect of a set of factors. But within that set of factors we must single out the economic factor as the decisive one, since the material conditions of life determine the very possibility of reproduction of the population. The birth rate is gradually and to an ever greater degree becoming a process that is regulated and managed by the family, one that is directly related to the character of social reproduction.

As we know, there are two types of social reproduction: extensive and intensive. In extensive reproduction the basic growth of the social product is achieved by increasing the mass of live labor, while in intensive reproduction this is done by increasing labor productivity. Extensive reproduction objectively necessitates a corresponding accelerated reproduction of manpower and therefore of the population as well.

Intensive expanded reproduction does not require a rapid quantitative reproduction of the population, since the rise of labor productivity is related above all to the qualitative development of manpower and the population, which is expressed in a rise in the level of general education and vocational and technical education of the workers, in improvement of their knowledge related to occupational qualifications.

The character of social production is thus related to employment of the population and determines its level. In a situation when there is an objective need for a large quantity of live labor, the need also arises for a set of measures aimed at stimulating the birth rate. Intensive development indeed requires reproduction of manpower at an increasingly high level of quality. This must inevitably result in larger demographic investments per "unit" of population, i.e., larger outlays of society for the training, upbringing and in general more prolonged support of the upcoming generation at the expense of society. The capitalist countries, which are at a high level of economic development, are in the present stage transferring the burden of expanded reproduction of the

population onto countries which are poorly developed from the economic standpoint by exploiting not only their natural resources, but also their labor resources. In essence they are plundering those countries, setting up enterprises in them for extraction of raw materials and other labor-intensive production operations and remunerating the work of the local population at the lowest level: a fraction of the remuneration of workers in the home countries. This plundering is also accomplished by "purchasing" skilled manpower, beginning with skilled workers, technicians and engineers and ending with the most valuable scientists of those countries.

Under the conditions of socialism the process of expanded reproduction of manpower differs fundamentally from its reproduction under capitalism. The authentically humanistic attitude toward labor resources (since in the socialist context they are not only an object, but also a subject on whose behalf the actual reproduction of society is being accomplished) requires, and the high level of economic development makes possible, both the extensive and also intensive types of reproduction under the conditions of full employment of the population. It is striking that although the present level of the birth rate in our country as a whole ensures a rather high level of expanded reproduction of the population, in certain major economic regions, including entire union republics (RSFSR, BSSR, UkSSR), and especially in certain cities, this level of reproduction is below what we would like. The conclusion therefore follows that a broad set of socioeconomic measures needs to be worked out to promote a rise in the birth rate in those regions of the country where it is most "unfavorable."

In the more remote future, when scientific-technical progress provides such a high productivity of labor that the sphere of material production will not need additional manpower, and the rise in labor productivity will depend to a greater degree on the rise of the level of education, i.e., on the "quality" of the new generations, the need for accelerated growth of the population will gradually lose its importance.

Certain Problems in Intensification of Reproduction of Manpower*

The Concept "Intensification of Reproduction of Manpower"

In recent years an altogether definite and constructive conception has taken shape in Marxist-Leninist political economy concerning the content of reproduction of manpower as a process that includes formation of manpower, its distribution (and under the conditions of capitalism, in which manpower is a commodity, its circulation) and the use of manpower.

Expanded reproduction of manpower may be predominantly extensive or predominantly intensive in nature.

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* Reprinted with certain changes from the publication "Ekonomicheskaya effektivnost' obshchestvennogo proizvodstva v period razvitogo sotsializma" [Economic Efficiency of Social Production in the Period of Advanced Socialism], Moscow, 1977, Chapter 10.

The formation of manpower takes place above all through the maintenance and restoration of the individual's ability to work, which is constantly being expended, used, in the work process. This is simple reproduction of manpower.

Expanded reproduction of manpower occurs extensively if its size increases with no change in its level of quality. A most important feature of the predominantly intensive formation of manpower is a rise in its level of education and occupational qualifications, i.e., its level of quality.

Distribution of manpower (of labor resources) is the process of socioeconomic placement of the able-bodied population by regions, spheres of activity, occupations, sectors and areas of labor, a process that may be accomplished in various forms which are peculiar to the particular socioeconomic formation. Under socialism socially organized forms of distribution of manpower arise and develop: government distribution of young people who have graduated from VUZ's and vocational and technical school; appeals to young volunteers for newly built enterprises, and so on.

But even in the context of the predominantly intensive type of expanded reproduction of manpower its extensive type is used as a supplemental factor ensuring full employment of the able-bodied population. But at the present time the capabilities of extensive expanded reproduction of manpower are almost exhausted in the USSR. The level of employment in an absolute majority of the economic regions of the country has already reached the limit, and the possibilities of attracting additional labor resources come down mainly to the natural growth of the able-bodied population.

The rise of expenditures for reproduction of manpower, expressed in changes in the level of living, is also an indicator of the intensiveness of reproduction of manpower. In the extensive type of reproduction of manpower indicators of health, average life span, the level of culture and technical education, moral and political characteristics and labor productivity of the individual remain unchanged. Only the size of the able-bodied population and the size of the work force increase. In intensive reproduction expenditures for manpower (in per capita terms) increase, which creates the basis for improvement of these qualitative indicators of the development of manpower for a growth of the national income by virtue of investments in the "human factor" as well as other factors.

Though in practice the two forms exist in unity, under present conditions the intensive form is assuming predominant importance; in this form the share of investments in the "human factor" systematically increases by comparison with investments in the material factor (means of production and so on).

In discussing enhancement of the role of the "human factor" in the rise of efficiency, we must not overlook the fact that it is governed by the character of contemporary technical progress, which involves the need for a faster rise in the level of worker qualification, whereas this took place considerably more slowly in the previous stage of development of technology.

This is specifically indicated by the substantial differences that exist in realization times of major scientific discoveries.

The relatively slow assimilation of new technology and production methods in the previous stage of development was manifested by the absence in that period of any substantial absolute reduction of the amount of manpower and liberation of manpower at existing enterprises, accompanied by worker retraining. But even in that period, when the assembly-line system began to be applied on a particularly large scale, disqualification of manpower did not occur in our country, by contrast with the economically advanced capitalist countries. In the context of the rapid growth of the number of workers on the assembly line, other types of work requiring little skill were done by the newly arriving workers who did not have any qualifications at all, and there was a certain lag in the development of the personal factor in production behind its material factors. This is explained to a considerable degree by subjective factors, specifically the factor such as the training of qualified personnel was not sufficiently future-oriented.

The importance of the qualitative factor in the growth of labor resources and of raising the level of education of the population and the relative share of skilled labor rises in the formation of labor resources in the period of advanced socialism.

In the present stage reproduction of labor resources is characterized by an essential rise in the level of manageability of this process by comparison with the previous stage thanks to improvement of the social mechanism of material and moral work incentives and development of vocational guidance and the profiling of training to fit the work to be done. Redistribution of manpower has a larger role in furnishing skilled personnel to the national economy (above all to speed up attainment of rated capacity at new enterprises), including redistribution of manpower beyond the confines of enterprises, sectors and regions.

At the same time it is becoming increasingly important to intensify the reproduction of manpower in order to raise the efficiency of social production. As we know, the principal means of raising the efficiency of social production is to raise the productivity of labor, which in turn depends both on technical progress and also on the quality of manpower, on the optimality of its distribution and on the effectiveness of its use.

Essential differences in significance and degree of treatment of the problems of reproduction of manpower make it advisable to take a selective approach to analyzing the components of intensification of reproduction of manpower as factors in the rise of labor productivity. Reckoning in this context on the high significance of a rise in the education of manpower as a factor in the rise of labor productivity, we will examine this aspect of reproduction of manpower first of all. At the same time, there is great interest in the impact which the process of the rising share of women in total employment has on the dynamic behavior of labor productivity and thereby on the efficiency of social production as well.

Education and the Rise in the Efficiency of Social Production

In view of the scientific-technical revolution and the need to bring the quality of manpower and new implements of labor and production technology into conformity with development of socialist production relations, the significance of the various factors in development of social production is being reevaluated, and more importance being given to the human factor. Ever greater importance is being attributed to improvement of the qualifications of workers, to improved use of skilled personnel, to discovering natural abilities of those employed in production, to creating conditions for productive labor, and to improvement of workplace adequacy. These main economic reserves and important factors for speeding up economic development and for raising social prosperity are interrelated and constitute an indivisible whole. Using that potential necessitates a more comprehensive target-program approach to the development and use of manpower resources than has been the case up to now.

In the light of the connections of all the elements in this whole, the conclusion is inescapable that education has the basic role in comprehensive development of the human personality (education in the broad sense, including upbringing and vocational training).

A great deal of research has been done on the question of education's impact on the rise of the socioeconomic efficiency of social production and on the rise of labor productivity in particular. Back in the thirties, when it was customary to set education in opposition to practical experience from the standpoint of their impact on the rise of labor productivity, it was proven in the writings of S. G. Strumilin on the economics of higher education* that development of education through improvement of qualifications is a most important factor in raising labor productivity and moreover is more economical than practical experience. But the rise in the share of funds required to raise the level of education of the population and the ever larger movement of young people into the system of education are raising the problem of determining the impact of the particular form in which education is obtained on the rise in the efficiency of social production and above all on the rise of labor productivity. But in the postwar period no specific surveys and studies have been made of the specific impact of education on the rise of labor productivity and growth of the national income (this impact has been discussed in the Soviet economics literature in the most general terms).

In the foreign literature quantitative estimation of the impact of education on labor productivity is done on the basis of the theory of the production function. But actual computations of the significance of these factors differ from one economist to the other. For instance, according to the computations of the American economist E. Dennison, who has thoroughly studied this question, the contribution of the level of education to the growth rates of labor productivity in the United States was 0.7 percent in the 1950-1962 period, 0.9 percent in the 1929-1957 period, this figure being an annual average. According to the

* See, for example, the book: S. G. Strumilin, "Izbrannyye proizvedeniya" [Selected Works], Vol 3, Moscow, 1964, p 110 and elsewhere.

estimates of another American scientist--D. Schwartzman, this indicator is one-third as much: 0.3 percent per year over the 1929-1963 period. The American economist E. Rolph calculated that over the period 1939-1964 labor productivity in the United States, computed in terms of gross national product per worker, rose an average of 2.8 percent per year, 2.1 percent of which was achieved by organizational and technical progress and 0.7 percent by improvement of worker qualifications.*

Two groups of factors in the growth of labor productivity are distinguished in the literature: 1) human development and 2) development of engineering and technology (including the organization of production). There are many circumstances that make it difficult to break down each of these groups, in particular the fact that they overlap and in their interaction duplicate one another to some degree. It is especially complicated to isolate the influence of education on the rise of labor productivity. According to our calculations (based on the data of the population census), the average worker's years of schooling and general and specialized education increased from 6.1 years in 1959 to 8.8 years in 1970. According to a rough calculation, as a result of adoption of universal 10th-grade education of young people and the further spread of secondary specialized education and higher education, the average worker's amount of schooling had risen to 9.8 years by 1975.

The results of the calculations of E. Dennison showed that the rise of education resulted in a rise of 0.62 percentage point in the national income in the United States, 0.3 percentage point in northwest Europe, and 0.56 percentage point in Italy.**

As Ya. B. Kvash has rightly noted, these differences indicate that the significance of 1 year of schooling varies with the total amount of schooling, but they also indicate that the strength of education's impact on the growth of the national income depends on the peculiarities of the economic structures of different countries.

According to the calculation of Ya. B. Kvash, which to some extent is analogous to the computational method used by E. Dennison, the average annual growth rate of labor productivity in the national income resulting from the impact of education has been at least 0.5 percent in the USSR. This contribution of education to the growth of social productivity of labor could be considerably more weighty if we optimize the distribution of education. Optimizing the educational system in the present stage would in our opinion require the following first of all:

i. a change in the distribution of education, whose most important indicator is the ratio between general education and vocational (specialized) education, and, "within" the latter--a change in level of education in various spheres of labor and by occupation;

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* A. V. Barysheva, "Proizvoditel'nost' truda v razvitykh kapitalisticheskikh stranakh" [Labor Productivity in the Advanced Capitalist Countries], Moscow, 1974, p 30.

** E. Dennison, "Issledovaniye razlichiy v tempakh ekonomicheskogo rosta" [Study of Differences in Economic Growth Rates], Moscow, 1974, p 217.

ii. reduction of differences in level of education from one economic region to another, from one sphere of labor to another and from one occupation to another.

The problem of optimizing the ratio between general education and specialized training is a complicated one and needs the most fixed attention of economists.

If we were to figuratively liken general education to the foundation, then specialized (vocational) education would figure as the building itself, which takes the particular functional load, and without it general education has no access to the practice of society's economic development.

The strategy for development of education in the context of advanced socialism is governed by a social task--comprehensive development of the personality. But it would be incorrect to set the performance of social tasks in opposition to economic tasks, since in the final analysis the performance of social tasks is based on the economic results of social production as a whole, and in this case this relationship is even a direct one. For instance, it is necessary from both the social aspect and also the economic aspect to set up a system of educational training which would make it possible to attain the maximum mutual understanding among all members of society and above all in the work process among the participants in social production. This might be described as occupational mutual understanding. But according to the data of engineering psychology and other ergonomic studies, it is very important to the most optimum organization of the work process and consequently to raising the economic efficiency of production as well. All members of society need to be brought closer together in their level of education if fuller mutual understanding is to be achieved.

The second (by logic of exposition, but first in its practical importance) direction for increasing the economic effectiveness of education as a factor in raising the efficiency of social production, a direction directly related to optimization of the distribution of education, is attainment of a correspondence between the level of requirements indispensable to use of the means of production being employed and the level of knowledge possessed by the people using those means.

Finally, the third direction for increasing the socioeconomic effectiveness of education lies in increasing the level of man's job satisfaction, which depends both on the level of education he has attained and also on the character of the work and specifically on the complexity of the technique being used. We will not touch upon this latter problem in the development of education, which has already been studied (mainly by sociologists), nor will we dwell in detail on other problems of increasing the economic effectiveness of education, especially improvement of the quality of education, which are less acute, and though essentially important, they have been substantially studied. I will pay principal attention to the distribution of education, and specifically to the relationship between general and vocational education in the training of workers for the most common occupations, and to the problem of eliminating the socioeconomic differences among the country's economic regions related to differences in the level of education between workers doing mental work and those doing physical work.*

* Actually we are dealing with workers whose work is predominantly physical or predominantly mental, but for the sake of brevity we will hereafter be using the terms "physical workers" and "mental workers."

An analysis of the level and dynamic development of the qualifications of workers leads to the conclusion that as work at enterprises is organized at present higher educational and vocational training of the workers often does not find expression in a rise of their vocational skills. This diminishes the motivation to attain a higher level of education and through feedback has an inhibitive effect on raising the economic effectiveness of education as a factor in economic growth.

It seems extremely important, then, to achieve a faster rise in the qualifications of young people both in order to raise the general economic effectiveness of the system of young people's education and also directly to raising the growth rates of labor productivity.

In recent years the average values of the coefficient of fulfillment of output quotas have been rising for workers who have a higher wage-scale rating. It is usually said in explanation of this fact that quotas are less strict for jobs with higher ratings. At the same time an analysis conducted by A. I. Gol'denberg of 20 occupational groups which were examined showed that the rise in the percentage of fulfillment of the output quota for workers in higher ratings also resulted from the fact that usually the worker performed work of a lower rating than his own more productively under the same conditions than when it was performed by a worker of a lower rating. For instance, it follows from the figures of a sample survey of 21,000 workers in machinebuilding, which was conducted by NIITruda [Scientific Research Institute of Labor],* that the actual qualification** of workers in Rating I was on the average one rating higher than their wage-scale qualifications, and for workers in Rating II--0.5 rating.

It is not infrequently pointed out in the literature that labor productivity of workers who have increased their qualification by one rating rises 15-20 percent, but the explanation is not given that this occurs thanks to the "effect of the qualification." The recommendation is made thereafter that worker ratings be increased only so that the average rating of the job operations is higher than the average rating of the workers. Higher-level organizations require enterprises to abide by this recommendation very carefully.

At the present time one of the principal tasks of the 10th Five-Year Plan is to substantially improve the quality of products produced, and accomplishment of technical progress requires that the pace of putting products into production and of renewing them be stepped up considerably.

The requirement advanced by A. I. Gol'denberg, to the effect that the level of worker qualification should correspond not to the level of work already being

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* A. P. Prigarin, V. M. Ryss et al., "Napryazhennost' norm truda" [The Strenuousness of Work Quotas], Moscow, 1968, pp 72, 73 and 86; L. E. Kunel'skiy, "Sotsial'noekonomicheskiye problemy zarabotnoy platy" [Socioeconomic Problems of Wages], Moscow, 1972.

** By the actual qualification we mean in this case the qualification reflecting the ability to fulfill the output quota in work of the rating which has been earned at the level attained by almost all representatives of that rating in the same occupation at the given enterprise.

performed, but to the average rating of that work which is being prepared for production, is more correct in this context. In other words, the level of worker qualifications must meet the level of complexity of that work they are to perform in the period of putting a new product into production, which substantially exceeds the complexity of work in producing a product already assimilated. This higher level of worker qualifications will promote not only successful accomplishment of technical progress, but, as a consequence, a rise of labor productivity on the scale of the entire national economy as well, and indeed even a rise of labor productivity within each industrial enterprise. A. I. Gol'denberg is quite right when he says that we need to dispense with the outdated and essentially erroneous idea that has persisted in economic theory and production practice that it is sufficient to successful development of production that the average rating of the enterprise's workers be equal to the average rating of the work done at that enterprise. To the point where the level of worker qualifications is actually considerably lower than the average rating of the jobs they perform the average impact of this requirement on the rise of worker qualifications has been manifested very slightly. But at the present time, when the nominal and real level of worker qualifications has risen considerably, and technical progress is advancing high requirements concerning qualifications, it is indispensable that the average rating be raised further to meet those requirements. A. I. Gol'denberg has accordingly advanced and backed up with sound arguments the proposal that worker skill ratings be raised regardless of the relationship between the ratings of the work and the ratings of the workers.*

When the average rating of the work done is higher than the average skill rating of the workers (provided fulfillment of output quotas is no lower than the average level), this shows that there is a lag in conforming to the qualification which has actually been attained, and this in turn threatens to hold back the subsequent rise in the qualifications of this group of workers.

Taking into account everything that we have already said, an atmosphere needs to be created at enterprises that is more conducive to improvement of the actual qualifications of the workers regardless of the relationship between the rating of the work and the skill rating of the workers. At many enterprises in a number of sectors workers spend a substantial part of their time doing work rated lower than their wage-scale rating. However, the supplement paid to piece-rate workers "because of a change in working conditions," in particular for work which is two ratings or more below their wage-scale rating, is only a few tenths of a percentage point of their wages throughout the entire industrial sector. Consequently, carrying out these recommendations does not imply a real threat to overexpenditure of the wage fund.** The management of the enterprise, relieved

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* "Methods of Mathematical Economics for Studying the Mechanism of Material Work Incentives, Elements of Work Time and Worker Qualifications," author's abstract of a candidate's dissertation, Moscow, 1974, pp 11-15.

** This can also be confirmed by data for seven enterprises in Rostovskaya Oblast, where the lag of wage-scale ratings averaged at least 0.7 rating and went as high as 1.5 ratings. It is advisable to keep the tendency for the actual qualification to exceed the wage-scale rating within the limits of a certain optimum close to one wage-scale rating.

of the need to adhere to the recommendation mentioned previously, will have a real opportunity to encourage tutoring among piece-rate workers with material and moral incentives.

We will examine further the problem of equalizing the level of worker education in the country's different economic regions.

It can be stated even a priori that the significance of this problem is very great, since along with the population's state of health, education is a decisive element in the formation of labor resources--the principal productive force of any particular region in the country. However, if breaking down the factor of education presents exceptional difficulties in analyzing the factors in the growth of labor productivity even at the level of the enterprise and in a sectoral breakdown, these difficulties are multiplied many times over when this factor is being broken down in the dynamic behavior of the effectiveness of the economic development of an entire region which possesses an interrelated complex of sectors. The difficulties lie in the fact that the role of education in equalizing the level of economic development of particular regions has not been studied at all so far.

Acknowledging the full complexity of the problem under study, we have renounced an attempt at comprehensive analysis of the impact of equalizing the level of education as a whole on raising the social productivity of labor by union republic and have confined our task solely to analyzing the degree of differences in level of education among the union republics and to an attempt to determine directions for closing those gaps.

Our initial hypothesis is that the essential differences in level of education of the population, as already noted, are a factor holding back the rise of the social productivity of labor, and eliminating those differences is a factor that speeds up that growth. We relate that proposition to the fact that departing from the extensive strategy of economic development is advancing higher requirements with respect to worker qualifications. This makes it necessary to raise and equalize the level of education of the population and its level of occupational qualifications. At the same time the state interest of the entire nation requires that an increasingly sizable share of labor resources be made available for redistribution to the country's eastern regions. But in recent years the role of the country's economic regions which are industrially advanced in the settlement and economic development of the eastern regions, in particular Siberia and the Far East, has dropped off appreciably. Yet even under those conditions migration performs an important social function of transferring to the new regions the progressive methods of economic activity from the settled regions.

Table 1 presents figures characterizing differentiation of the republics and types of labor with respect to the level of education of the employed population. In that table the union republics are ranked in descending order on the basis of the level of education attained by the entire employed population.

Table 1. Number of Man-Years of Education Per Employed Person*

Union Republic	Entire Employed Population	Engaged Primarily in Physical Labor	Engaged Primarily in Mental Labor	Difference (Col 4 - Col 3)
1	2	3	4	5
Georgian	9.19	7.68	12.81	5.13
Armenian	8.91	7.44	12.16	4.72
Azerbaijan	8.69	7.30	12.30	5.00
Latvian	8.51	7.10	11.85	4.75
Estonian	8.49	7.11	11.66	4.55
Uzbek	8.49	7.32	11.94	4.62
Ukrainian	8.46	7.25	12.17	4.92
RSFSR	8.37	6.97	11.18	4.21
Kirghiz	8.29	7.04	12.01	4.97
Belorussian	8.02	6.70	12.06	5.36
Tajik	7.95	6.88	11.78	4.90
Turkmen	7.93	7.19	11.76	4.57
Kazakh	7.49	5.56	11.60	6.04
Lithuanian	7.46	6.01	11.86	5.85
Moldavian	7.33	6.29	12.05	5.76

Correlation coefficients: Col 2 and Col 3 = 0.853; Col 2 and Col 4 = 0.491; Col 3 and Col 5 = -0.832; Col 4 and Col 5 = 0.041.

* The calculations were made according to the figures of the 1970 Population Census.

The figures in Table 1 distinctly show that the level of education does not take the form of an average arithmetic quantity with small deviations from that average, but as a quantity with large differences in level of education from one republic to another and within them from one type of work to another and one group of occupations to another.

Differences in level of education between physical workers and mental workers are indicated by figures on differences in the level of education per employed person (in man-years): RSFSR--4.21; ESSR--4.55; TuSSR--4.57; UzSSR--4.62; ArSSR--4.72; LaSSR--4.75; TaSSR--4.90; UkSSR--4.92; KiSSR--4.97; AzSSR--5; GSSR--5.13; BSSR--5.36; MSSR--5.76; LiSSR--5.85; KaSSR--6.04.

The figures we have obtained on the relationship in education between mental and physical workers can be analyzed in relation to figures on the sphere of education proper and also in relation to the patterns of social production as a whole, including reproduction of socioeconomic relations. If we undertake this analysis solely from the former point of view and obtain the correlation of the connection between levels of education of mental and physical workers by republics, on the one hand, and the size of the difference between these levels on the other, the line of argument should be as follows.

We will adopt some notations.

U--average level of education of mental workers; F--average level of education of physical workers; R--size of the gap (in man-years of education) between the quantities U and F (R = U - F); C_{RU}--coefficient of correlation between the quantities R and U; C_{RF}--coefficient of correlation between the quantities R and F.

Comparing the correlation coefficients C_{RU} and C_{RF}, we can presumably resolve the question of which type of education--higher and secondary specialized education, which determines the level of education of workers doing primarily mental work, or general and vocational and technical education, which determines the level of education of workers doing primarily physical labor--needs to be developed first. At the same time two simplified assumptions are made:

1) that there exists an optimum gap between U and F, which moreover is in the end shaping up properly in the average for the country, but there may be appreciable disproportions within the various republics;

2) that that indicator (U or F) which characterizes differences between the republics reflects the basic pattern of formation of the level of education. The other one, therefore, should be "adjusted" to it, and not the other way about.

Then if $C_{RU} > C_{RF}$, the variations (differences between them) are determined primarily by the variation of U. Consequently, specialized (more accurately, higher and secondary specialized) education should primarily be developed; but if $C_{RF} > C_{RU}$--then general education should primarily be developed.

It turned out from the data of the analysis that $C_{RU} = -0.832$; $C_{RF} = 0.041$, i.e., $C_{RF} > C_{RU}$. Consequently, for the country as a whole we need to develop general and vocational and technical education first.

This conclusion is a formal one, but it is correct in the sense that it suggests just what level of education has a decisive influence on the size of the gap. And since it is our initial premise that gaps in level of education between mental workers and physical workers should be as small as possible and gradually diminish, the level of education of physical workers proves to have the principal and decisive influence on reduction of those gaps. They obtain education mainly in the form of general and lower-level vocational and technical training. Consequently, it is these forms of education that should be developed first.

In a more thorough qualitative analysis we arrive at the following result. In those republics where the level of education of mental workers is higher, the level of education of physical workers is also higher. Consequently, it is in these republics that the gap between the two types of labor is small. But in republics with a low level of education of mental workers, the level of education of physical workers is still lower. And here the gap is larger.

In those republics where U is high, the value of R is low, since F is also high, and where U is low, the value of R is high, since F is still lower than U.

It seems at first that instead of raising the level of education of physical workers, the education of mental workers should rise at least equally. But, as the figures show, when the level of education of physical workers rises relatively rapidly, the same indicator for mental workers is rising more slowly. This is a normal phenomenon, since the level of mental workers cannot depend solely on a continuous increase in the number of years of study. Even at the present time it has reached a sizable value for the higher group (approaching 15 years). A further rise would mean a decrease in the actual labor employment of workers in this sphere because of the increased time to obtain education. And this runs counter both to individual interests and also to social interests. This contradiction is resolved by the fact that the principle of "training to last a lifetime" is being replaced for mental workers by the principle "training throughout one's life" without leaving one's principal job. This principle is being applied even now, and it will become still more widespread in future.

Aside from that, as already noted, in those republics where the level of education is relatively low for both mental workers and also physical workers, the differences in the level of their education is substantially greater than in the republics with relatively high levels of education. Given this situation, it would be incorrect and impossible to adopt the orientation of "lowering" the level of mental labor in order to diminish the differences. After all, this level has already been attained. Nor, however, can one adopt the orientation of a substantial rise in the level of education of mental workers, since then the gap widens still further. Nor would it be sensible to lower the level of training of physical workers in those republics where it is the highest, though, of course, reducing it would diminish differences from one republic to another. Thus the only logical and formal conclusion is that the most sensible thing would be to speed up the rise of the educational level of physical workers wherever it is lagging far behind.

The analysis made above of differences among the union republics with respect to the level of education of those employed in the sphere of social labor does not furnish a full enough explanation of the causes of these differences nor of the parameters of their optimization and strategies for achieving that optimization.

An additional analysis in that direction is required, first, to discover the degree of differences in level of education among workers in the same occupations within each republic and in those same occupations from one republic to another.

The analysis of differences in levels of education shows that in the sphere of physical labor workers employed in the machinebuilding and chemical industries are in the first place (the highest group) with respect to level of education (qualifications) in almost all republics. Metallurgical workers, miners and workers employed using materials-handling machines are in the second group. Workers in light industry join that group as well. In the third group are those employed in transportation, communications, the building materials industry, and food industry workers. The fourth group brings together construction workers, unskilled workers (raznorabochiye), and warehouse workers. The fifth (lowest group) consists of workers employed in agriculture, as well as workers in municipal services and utilities and consumer services.

Differences in level of education from republic to republic and between the physical and mental labor groups are evident in more summary form from the figures in Table 2.

Table 2

Union Republic	Between Highest Group of Mental and Lowest Group of Physical Labor	Between Highest and Lowest Groups Employed at Physical Labor	Between Highest and Lowest Groups Employed at Mental Labor
USSR	7.89	2.52	4.29
Uzbek	7.29	2.63	3.32
Armenian	7.34	2.61	3.80
Kazakh	7.41	1.72	6.22
Tajik	7.51	2.34	4.43
Georgian	7.56	2.68	3.32
Turkmen	7.73	2.69	4.37
Estonian	7.73	2.38	4.36
Ukrainian	7.74	2.54	4.23
Azerbaijan	7.81	2.43	4.32
RSFSR	7.96	2.55	3.55
Kirghiz	7.98	2.59	3.90
Belorussian	8.16	3.03	3.94
Lithuanian	8.32	2.54	4.41
Latvian	8.38	2.31	4.78
Moldavian	8.41	3.33	4.38

As we see from these figures, differences in level of education between the highest group of mental labor and the lowest group of physical labor are large (they comprise almost eight grades for the USSR). This size of the gap is close to the average number of years of study for the entire employed population. Among workers doing predominantly physical labor these differences (between the top and bottom groups) amount to more than 2.5 years (which is just as substantial if we take into account the average level of education of the entire group).

It is a very unfavorable circumstance that differences in level of education are substantial between workers in the same occupations who are employed in different republics.

The analysis shows that the differences under consideration in the level of education are subject to the influence of two basic factors, which in a number of cases operate in different directions. We are referring first of all to the structural factor, i.e., to the dependence of the level of average education of employed persons on the economic structure of each particular republic. This dependence is manifested most distinctly in the case when there is a high share in the economy of agriculture, whose workers have the lowest level of education (with certain exceptions, for example, in Uzbek SSR). This is one of the important reasons why the gap in level of education between the lowest and highest

groups is largest in the Kirghiz, Belorussian, Lithuanian, Latvian and Moldavian union republics. A high level of education is achieved to a considerable extent by virtue of an increase in the number of members of the intelligentsia and by an increase in its relative share in the entire population. For instance, because they have the highest general level of education the Georgian, Armenian, Uzbek and Tajik union republics have the smallest gap in level of education between the highest and lowest groups.

Experience in socialist economic activity and also comparison of the degree of differences for analogous groups of physical workers in the most economically advanced capitalist countries show that convergence in the level of education and consequently in qualifications has a substantial beneficial importance to the rise of labor productivity.

On Certain Directions for Increasing the Effectiveness of Using Female Labor*

For a lengthy period of time the level of employment in our country was raised to a large extent by bringing women from the household and the private farm into the sphere of social labor. This can be evaluated from figures on the growth of the number of workers and employees by sex over the period 1941-1975 (in percentage of the total growth of the work force):

	Male	Female
National economy	42.3	57.7
Industry	44.0	56.0
Agriculture	49.0	51.0
Construction	66.1	33.9
Communications	22.9	77.1
Trade, food service industry, material and technical supply, sales, procurement	5.0	95.0
Health service, physical education and social security	13.1	86.9
Education and culture	6.4	93.6
Science and scientific services	49.3	50.7
Housing management, public utilities and municipal services	41.0	59.0

The increase in the number of workers doing manual labor in the industrial sector over the period 1962-1969 (without taking into account repair work and adjustment of machines and mechanisms) was achieved almost entirely (95 percent) with women. There was a substantial increase in the share of women employed at such common types of labor with little mechanization as those performed by stockroom clerks, issuing clerks and receiving clerks (74 percent in 1970 as against 59 percent in 1959) and mailmen (84 percent as against 73 percent, respectively).

Many women previously employed in the household have been brought into the workplace. Over the last 5 years, while the total number of workers and employees

* Material in this section was also taken from the article: "Problems of Distribution and Use of Labor Resources," SOTSIALISTICHESKIY TRUD, No 3, 1977.

increased by 11.97 million, the number of women (workers and employees) increased by 6.81 million. By 1975 the total number of women had reached a huge figure--52.6 million, distributed as follows: 16.7 million in industry, 4.5 million in agriculture (sovkhozes), 6.8 million in trade and procurements, 4.9 million in the health care service, 6.6 million in education and culture, and 2.0 million women in science.

Women workers and employees comprise more than half of all workers and employees in the national economy at the present time. By comparison with 1950, the relative share of women among workers and employees had increased from 47 to 51.5 percent in 1975, and it rose even in the production sectors: for example, in industry (from 46 to 49 percent) and agriculture (42-44 percent), while it dropped only in construction (from 33 to 29 percent) and in transportation (from 28 to 24 percent). The highest relative share of women is now in such sectors as health care (84 percent), trade and procurements (76 percent), education (73 percent), communications (64 percent), and administrative agencies in the government and economy (64 percent).

Much attention has been paid to working women in our country. Much is being done to improve their working conditions; women enjoy a number of advantages and benefits set down in legislation. At the same time the rapid growth of the number of women in social production has intensified the urgency of solving a number of problems such as a sharp reduction of heavy and manual labor, improvement of working conditions, improvement of their qualifications, and so on.

We must note that the effort to free women from laborious operations is still going extremely slowly, and the reason is the inadequate introduction of mechanization. Take a sector like trade, especially the food trade in small stores. At present there is little mechanization there, and expenditures of heavy manual labor are substantial. Sometimes women have to lift and carry heavy articles, they spend their entire working day on their feet, and so on.

We should also take into account that the women entering the workplace ordinarily do not have the proper training and qualifications, since they have come directly from the household. Moreover, because of the interruption related to giving birth and shortcomings in the sphere of services, the average woman's qualification in industry is one wage-scale rating below the average man. In the present wage-rate schedules this means a lag of approximately 15-17 percent with respect to the level of qualification.

Consequently, one of the principal directions for raising the social productivity of labor and for eliminating the shortage of manpower is to improve the qualifications of women workers and to move female labor into those sectors and those occupations where this labor is most efficient.

Another of the reasons why the use of female labor is not effective enough is that the growth of their employment in the economy has occurred predominantly in occupations where labor productivity of women is lower than that of men. They include many occupations in agriculture and construction, where the highest increase in the relative share of women workers and employees has been recorded by

comparison with the prewar period. For example, among construction workers the relative share of women increased 1.5-fold between 1959 and 1970, which was related to a considerable extent to the shortage of male manpower. All of this has naturally had an inhibiting effect on the rise of labor productivity.

Consequently, one of the main directions for raising the social productivity of labor in the coming period is to improve the qualifications of women workers and to transfer female labor into those sectors or occupations in which that labor is most efficient, for example, into the most promising and highly mechanized branches of material production (electronics, radio equipment), as well as into promising and rapidly developing new branches of the service sphere, in particular tourism, insurance, legal aid service, and so on.

We should also take into account that the faster growth of employment of women in the sphere of social production has had an adverse effect on the pattern of reproduction of the population. The indispensable need to adjust the increase in the size of the employed population to reproduction and comprehensive development of the upcoming generations necessitates a decrease in the total work load on women, above all by developing consumer services to meet the needs of the family and by creating conditions so that an ever more sizable portion of the women have a short workday. An analysis of Soviet and foreign experience shows that in terms of hourly output the growth rates of labor productivity do not drop when this schedule is adopted.

Apparently this brings about a certain reduction in the level of female employment, in terms of work time, in the sphere of social labor as compared to the present level, but without reducing the actual number of physical persons. Certain scientists deem it necessary to adopt the orientation of reducing the number of women employed, since assuming adequate material support by the state the women will bring up children to the age of 3 in the family, without working. This orientation seems unsound to us. Sociological surveys conducted in recent years show that further expansion of the sphere in which the work of women with small children is applied constitutes an objective socioeconomic law. At the same time the tasks of raising labor productivity make it an objective necessity to equalize the level of qualifications of male and female workers. Experience already acquired, in particular at enterprises in precision machinebuilding, has shown that technical progress is creating broad opportunities for further expansion of the use of the most highly skilled female labor, for successful mastery of a number of occupations which previously were inaccessible to women.

The efficiency of female labor can be raised only in conjunction with improvement of the protection of mothers and infants and improvement of the working conditions of women, combined with a differentiated approach to the use of female labor resources. The first measures to be taken in this direction are the following:

i. compilation of balances of labor resources by sex in sectoral and regional breakdowns;

ii. identification in national economic plans, as well as in plans for social development of sectors and enterprises, of measures related to priority mechanization of laborious operations in which women are primarily employed, to training of women in occupations and new specialties in accordance with the requirements of technical progress and the biotechnology of female labor;

iii. improvement of the system of monitoring fulfillment of labor legislation concerning the freeing of women workers from heavy operations and those harmful to the female organism in all sectors of the economy in accordance with the requirements of contemporary production and technical progress;

iv. not only should the counterindication concerning performance of these operations be regularly revised, but a determination should also be made of those types of operations which are most suitable for women, as they arise as a result of technical progress or as they cease to be heavy jobs, but are still performed by men;

v. acceleration of the process of elimination of night shifts in branches of the industrial sector where women are predominantly employed;

vi. the granting of women who have small children the right to one unpaid day off per month (at their own choosing);

vii. organization of improvement of qualifications of working women with children within working hours and retaining their average monthly wage; changing the length of the workday and the time when women begin and end the workday (without doing injury to the interests of production) as a function of age and family situation (using the "Zlobin method," the short workday and the short workweek, and so on);

viii. determination of the minimum standard biotechnological requirements in developing and designing equipment, machines and manufacturing processes where female labor will be used so as to take into account the anthropological and other peculiarities of the female organism.

It is evident that we should also think about granting enterprises and organizations broader rights in improving the qualifications of women with children during their workday, so that they can change the time when the workday begins and ends (without doing injury to the interests of production) as a function of the age and family situation (broader use of the schedules of the short workday and the short workweek, and so on).

It would be advisable in the system of vocational and technical education to set up a quota for enrollment of young women for a list of occupations which has been worked out by scientific research organizations.

The problems of optimum use of female labor also need broader study. Research ought to be conducted from the economic, social and legal standpoints and should involve participation of institutes of economics, philosophy and law of the USSR Academy of Sciences and the academies of sciences of the union republics,

institutes of USSR Gosplan and the gosplans of the union republics, the institute of the USSR Central Statistical Administration and other interested organizations and institutions.

Chapter 3. Social and Political Journalism

Alcohol-Related Losses and Combating Them*

Prevalence and Certain Consequences

The use of alcohol can be regarded not only as one of the historical forms of irrational consumption, but also as a squandering of human energy. Nevertheless, we are still producing a rather large amount of vodka. It has already been remarked in the press that "without vodka sales a large hole would immediately appear on the revenue side of our budget. But no one has yet gone on to calculate those losses borne outside the budget by the economy because of the supposedly superprofitable trade in vodka."** Vodka is for some reason put in the category of the means of existence. "But is it possible to put any poison in the class as a means of existence? To be sure, even snake venom, administered in microdoses, may be a medicine. But this cannot be applied at all to agents for large-scale intoxication of fellow citizens such as the hard liquors which are now manufactured in billions of liters per year and are prescribed not in so many fingers, but in tumblers and pitchers. These revolting poisons are not immediately fatal. But they carry no less a threat of a slow death and moral impoverishment of the pitiable people who stagger involuntarily in an alcoholic stupor.

"Alcohol threatens to be humanity's greatest scourge. It is far more frightening than hoodlumism, since itself it is a prior cause not only of acts of hoodlumism, but also of the vast majority of other more serious crimes and moral inconstancy toward all humanity's good principles. It is high time to enter into a resolute struggle against that threat."***

On the basis of a study of worldwide experience and many scientific studies the conclusion can be drawn that in evaluating the level (degree) of development of alcoholism the incidence (in absolute and relative terms) of the use of strong alcoholic beverages has decisive importance.

On the basis of the predominant character of the use of alcoholic beverages of differing strength countries can be divided into "beer" countries like England, where beer's relative share in terms of pure alcohol is 79 percent, and also West Germany, where it is 56 percent; "wine" countries like France, where wine's relative share is 81 percent, and Italy where it is 91 percent; and "hard liquor" countries like the USSR, the United States, Poland, Sweden--where the relative share of hard liquor is at least 50 percent.

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** "Reforma stavit problemy" [The Reform Is Posing Problems], Moscow, 1968, p 12.

*** Ibid.

The relative share of hard liquor (40°-proof strength or higher) in the total amount of alcoholic beverages (converted to liters of absolute alcohol) is extremely high in the USSR and according to figures for the 1965-1968 period was 62.3 percent. We should take into account here that these figures do not include consumption of homemade liquor.

It is extremely difficult to determine with sufficient accuracy the level of consumption of homemade liquor. According to figures of the USSR Central Statistical Administration, state vodka production for the country as a whole was 446 million liters in 1927, and home distillers distilled 467 million, i.e., more homemade liquor was consumed.* In 1928 the relative share of homemade liquor was still higher. According to a rough computation based on the data of a survey conducted in Dmitrovskiy Rayon in Moskovskaya Oblast, average consumption per inhabitant of the rayon was 12.7 liters of vodka and 10.4 liters of homemade liquor per year in 1960. On the whole at the present time consumption of homemade liquor probably amounts to at least 50 percent of the alcohol represented by vodka.

We will examine the principal consequences of alcoholism from the social and economic standpoint, aspects which are closely related. The most serious social consequences must include criminality and other breaches of the law; deterioration of the physical and mental state of health and ability to work of the portion of the population subject to alcoholism; the birth of mentally retarded children and children predisposed to mental illness.

Among the most serious economic consequences we must include the drag on the rise of labor productivity, the accident rate, the decline of work discipline, higher personnel turnover of the work force, and the creation of parasitic elements.

The direct functional relationship between the rise in per capita alcohol consumption, especially the consumption of hard liquor, and the rise in criminality has been established in a large number of studies both in our own country and abroad.

The particularly serious social consequences of hard-liquor alcoholism in particular are confirmed by the following. In RSFSR, UkSSR, BSSR, as well as in the Baltic Coast republics, where alcoholic beverages predominantly of high strength are consumed, the overwhelming majority of serious crimes are related to alcoholism. In the other union republics, where the alcoholic beverages consumed are predominantly of low strength (grape wine)--in Azerbaijan, Georgia and Armenia, crimes related to alcoholism have a negligible share (Armenia is the only union republic which has no sobering-up room in police stations because of the lack of "customers").

It is beyond question that our society is suffering huge unproductive losses of time related to alcoholism (time lost in drinking bouts and hangovers, absenteeism during binges; time spent in sobering-up rooms at the police station for

* D. Shumskiy, "The Gap Concerning Homemade Liquor," PRAVDA, 16 July 1973.

petty hoodlumism and in prison for more serious crimes). "And to these losses we should also add virtually all the work time of such completely sober agencies called upon to fight crime as the police, the judicial system and the prison administration, which are still able to do little in this matter until all the causes creating the rise of the crime rate and of alcoholism above all have been eradicated."*

Alcoholism is assuming ever greater importance among the factors holding back the rise of labor productivity.** According to the data of medical research, the intake of 120 grams of vodka decreases the ability to work 17-20 percent, and even 30-50 grams of vodka noticeably detracts from a man's physical and mental ability to work for a period from a few hours to 1-2 weeks [sic]. It reduces the pace of computation either in the head or on paper, and increases the number of errors. For example, according to data of the German scientist Aschaffenburg, after an intake of 36 grams of wine spirit (equal to approximately 1 liter of beer) a typesetter's speed drops 15 percent. After an intake of 40 grams of absolute alcohol in the form of beer (4°), wine (14°), and cognac (34°), the deterioration of computation, attention, accuracy and muscular strength was 9.2, 10.4 and 12 percent, respectively. The working ability of the fingers drops almost 30 percent. According to our calculations, a complete "sobering up" of work processes would result in an approximately 10-percent rise of labor productivity. But even with partial "sobering up" of work processes by reducing the strength of the vodka and carrying out certain other proposals which will be taken up below, we can count on a 2-2.5-percent increase in labor productivity (on the basis of expert evaluation).

It is well known that automation, remote control, electronics, control panels and even assembly lines and flow lines require less physical strength of the worker, but greater attention, concentration, memory and quick reactions.

But it precisely these qualities which are lost under the influence of alcohol, since the level of critical evaluation of one's own actions is weakened when alcohol is used.

In connection with the figures we have given, a survey conducted by the society of Russian manufacturers and factory owners during 3 months of 1914 (August, September and October) in order to discover the impact on labor productivity of the complete ban on the sale of vodka, which was adopted in connection with carrying out the mobilization, is of interest for reasons that are by no means only historical. The study covered 215,000 workers at 171 enterprises. It turned out the labor productivity (in spite of counteracting factors) rose at every enterprise without exception. The average increase was 9.2 percent, but it was 12.7 percent (data from Moscow) in the metal manufacturing industry where the work force is predominantly male. According to the figures of the same survey, in Moscow absenteeism in the 3 months of the "sober" regime was down 46.8

* "Reforma stavit problemy," p 13.

** Unfortunately the effect of alcoholism on labor productivity, the decline of the ability to work and the state of health are hardly reflected at all in statistical data and have been studied extremely little.

percent for male workers, 0.8 percent for female workers, and 27 percent on the average by comparison with the corresponding period of 1913.

We should note that alcoholism, especially when there is a shortage of manpower, and it is now being experienced by most sectors of the economy, manifestly holds back improvement of work discipline. Cases of unjustified absences (because of drunkenness) become more frequent at enterprises in the form of unpaid leave granted by permission of the management.

Unfortunately the conducting of even sample surveys of alcoholism not uncommonly faces resistance on various pretexts at certain enterprises. On the basis of conversations with management personnel at enterprises in Moscow, Leningrad and Sverdlovsk we came to the conclusion that certain management personnel of enterprises, beginning with the foremen of production sections, are more interested in covering up than in exposing actual cases of alcoholism and particularly its consequences.

On Certain Causes of Alcoholism

It is difficult to give a brief and sufficiently correct explanation of the causes of alcoholism. Among them it is evident that we must give first place to the need to relieve tension, the desire to cast off the burden of obligatory rules of behavior. The second cause, one that is related to the previous one, might be called the inability or impossibility of sensible use of free time. The boundaries of free time have now expanded considerably. In industry the length of the workweek is approximately one-third shorter than before the revolution. Adoption of the 5-day workweek has given the bulk of working people about 100 days off per year. Scientific-technical progress, the increasing complexity of work processes, and the increase in the share of mental efforts also make it necessary that the workers have a full-fledged rest and also that they regularly raise their cultural level. But at present free time is often squandered unwisely, senselessly, sometimes even in a way detrimental both to the person himself and to society, which has more to do with hard drinking than anything else.

There is also a definite interrelationship between hard drinking and remnants of the past. Habits, prejudices, primitive needs, and stupid forms of human intercourse that have taken shape often figure as one of the principal causes of drunkenness.

In our opinion, the sociologist V. F. Mayer has identified the typical causes and conditions for the development of alcoholism.* The author used the method of a solid survey using a questionnaire in April and May 1971 to study a very representative group of persons who had repeatedly committed breaches of work discipline and breaches of the peace at one of the plants in Vladimir. The respondents were divided into three groups: I--persons under age 25; II--persons between 25 and 40; III--persons over 40. The principal causes serving as the pretext for the use of alcohol which were named by respondents in all three

* V. F. Mayer has kindly put the data he has gathered at our disposition.

groups were the following (in descending order of importance): public holidays, personal holidays, to celebrate a day off, to lift one's spirits, to celebrate payday, to celebrate the making of a purchase, a promotion, and so on, because of a chance meeting, fatigue after work, poor housing conditions, bad relations in the family, boredom, a bad mood, I cannot resist the temptation, life is not going well, I do not know what I am doing.

The responses obtained on the causes of alcoholism indicate, first, the strong influence of customs already formed. The custom of celebrating a holiday by drinking is in the first place among all three groups of causes studied. The responses are also a confirmation of the well-known conclusion of social medicine to the effect that alcoholics as a rule state the consequence as a cause. For example, the bad family relations referred to as a cause in the survey turned out, when a check was made, to be a consequence of alcoholism.

The objective data concerning the material position of the respondents show that housing conditions, wages, the family's possession of durable consumer goods and housewares do not differ from the figures for other groups of workers in the plant.

The offenders note that invariably they use alcoholic beverages in meeting their need for social intercourse (meetings with friends, strolls, celebrations). For a certain portion of the offenders with undeveloped needs abandoning the consumption of alcoholic beverages would be equivalent to terminating relations with their friends. Unfortunately the opinion also prevails that consumption of alcoholic beverages is evidence of "strength," of a man's "toughness." This opinion is especially widespread among young people.

The lack of self-control in consumption of alcoholic beverages has the result that nearly 40 percent of the respondents do not abide by any standards in drinking. For instance, the survey showed that 2.6 percent drink nearly every day, 51.7 percent on Saturdays and Sundays, and 88.9 percent on holidays. As a rule the offenders participate only passively in civic work and the life of the collective.

We would like to make one digression in connection with these figures. On the basis of much scientific research and worldwide experience the conclusion can be drawn that the use of dry grape wines and also fruit and berry wines has no adverse effect and can even be regarded as a sensible tonic (in moderate doses, of course). It cannot be assumed that a man should consume only those products which are worthwhile in virtually all circumstances. If that point of view were taken, we might declare "war" on all tonic beverages, including Pepsi Cola, coffee and strong tea. Even pepper, horseradish and mustard might fall into the category of unwise consumption if this approach were taken....

In short, to fight only against vodka is to slacken the struggle against drunkenness. Treating and punishing drunkards amounts to little; it is prevention of this social evil that is needed.

Strategies and Weapons in the Fight Against Alcoholism

In attempting to summarize the practical effort in combating alcoholism we have come to the conclusion that although it is being carried out with sufficient vigor, it still is far from what it should be in view of its importance. Its effectiveness is extremely low. How can this be explained?

Administrative measures and other measures against alcoholism which have been taken in our country are aimed primarily against those who have nearly drunk themselves to ruin, i.e., people who are sick and involuntary, often people who are not responsible for their behavior when inebriated, but they ought to be directed toward young people who have just begun to enter the path of alcoholism. Balance is moreover lacking between the administrative measures, the economic measures and the training measures. Measures in the socioeconomic and medical fields are often replaced by criminal action and administrative measures. To be specific, this is manifested in the fact that alcoholics do not always receive the necessary treatment, which sometimes is replaced by penalties of various kinds and even by imprisonment, which ultimately costs the state far more and does not achieve the requisite social and economic benefit.

The campaign against alcoholism by the public has not been persistent enough and is very one-sided: it also comes down to penalties of various kinds. The penalties are moreover pronounced on people who are already ill with alcoholism, and as a consequence these measures do not achieve their purpose.

At the same time the beginning of the illness, which is mainly to be found in young people, is not attracting enough attention. It was established in a survey of alcoholics receiving outpatient treatment that 26 percent of the men made their first acquaintance with alcoholism under age 15, 65 percent under age 18 and 80 percent under age 20.

A ukase of the Presidium of the RSFSR Supreme Soviet dated 8 May 1961, which on the basis of Article 158 of the RSFSR Criminal Code provides for imprisonment not to exceed 1 year or a fine not to exceed 300 rubles for manufacturing homemade liquor without intending to sell it and imprisonment of at least 1 and no more than 3 years along with confiscation of property if these beverages are manufactured for the purpose of sale, is in actuality hardly enforced at all.

The situation is much the same with punishment for manufacturing stills for home use and for purchasing a still for home use. The stealing of alcohol and liquids containing alcohol intended for technical and medical purposes is not being eradicated with any kind of effectiveness.

In our opinion, a good part of the explanation for this situation lies in the fact that these punitive measures appear extremely harsh in the eyes of the public (and indeed in the opinion of many administrators) since they regard drunkenness as a misdemeanor and not a crime. That is why replacing criminal administrative measures by economic administrative measures (fines and the like) seems to us a more effective direction in combating alcoholism.

One of the essential difficulties of the struggle against alcoholism lies in the fact that alcoholics rarely request treatment, and when they do, this is ordinarily only in the stage of chronic alcoholism. The lengthy (up to 2 years) mandatory treatment in dispensaries where treatment is combined with work, which is more effective in such cases, has not had the development in our country which is necessary. Those alcoholics sent to prison for crimes committed while they were intoxicated as a rule retain their addiction to alcohol, and they resume their drinking after being discharged. All of this compels the conclusion that society's principal task is prevention, i.e., averting alcoholism, as well as active identification of incipient alcoholics at the earliest date and organization of their treatment.

As for combating alcoholism as an antisocial phenomenon, there are two diametrically opposed positions. One comes down to "nonresistance." The gist of it is that there is no point spending a great deal of energy in combating alcoholism, which is a futile struggle, since:

a) put simply, vodka is necessary to the budget, and revenues from vodka can be replaced only in the remote future, but the funds are necessary now;

b) administrative measures cannot have an essential impact on reducing alcoholism;

c) any ban on the production and sale of vodka would result in more home distilling.

The conclusion is drawn from all this that the struggle should be waged only against the clearly criminal manifestations of alcoholism in everyday life and in the workplace.

The opposing position is demanding a "dry" law and complete cessation of the production of vodka, since whatever training programs we carried out, so long as we do not liquidate the production of distilled alcoholic beverages, i.e., so long as there is something to drink, people will drink.

As in many other cases, the extreme positions are unacceptable.

Irrational forms of consumption, in this case of alcohol, cannot be liquidated in a short period of time. But some of them may be more harmful, others less harmful, and society should find acceptable variants. An entertaining film (even if its quality is not very high) is better, for instance, than being drunk. A good picture is still better. For example, when the film "Seventeen Moments of Spring" was shown on television, the streets were empty, ticket sales were down in movie theaters, telephones were unplugged, business and other meetings were postponed, since nearly everyone, including lovers of alcohol, were "victims" of the television set during those days. On the testimony of the personnel of medical sobering-up rooms, the universal interest in a good film also affects the regular "clients" of those institutions.

Drafting an elaborate program of the campaign against alcoholism to cover a period of several years requires first of all a thorough study of the economic losses related to alcoholism. Unfortunately such a study is being held back by the present statistical reporting system, which not only does not reveal alcoholism's impact on the economic indicators of our activity, but draws a veil over it entirely. For instance, whole-day absences from work because of drunkenness are frequently reported as leave with permission of the management.

It would be advisable to classify the measures of the fight against alcoholism in two categories: actions of a tactical nature calculated for the next few years, and a "strategic" program calculated for a lengthy period during which it would be possible to first reduce and then eliminate the use of distilled alcoholic beverages.

Among the former we might include the following measures, which do not require that the state make any sort of sizable outlays of funds from the budget.

1. A substantial (25 percent) reduction of the proof strength of all the vodka manufactured in the country, with the present price level retained.

2. A stepping up of the economic measures aimed at combating home distilling to replace the criminal measures.

3. Expansion of the production of nonalcoholic beverages and tonics.

4. The conduct of an extensive sample survey of the socioeconomic consequences of alcoholism.

Fear that reducing the proof strength of vodka would "automatically" result in a corresponding increase in the production of home-distilled liquor is not well founded. For a long time now this threatened rise of home distilling has been an obstacle in the fight against alcoholism.

It would be economically and socially justifiable to adopt a system of money fines for production of home-distilled liquor which would exceed its "value" by as much as 10-fold or 15-fold, the money thus obtained to be spent on the campaign against alcoholism and on issuing bonuses to persons, including law enforcement personnel, who have detected and informed on producers of home-distilled liquor.

The following measure seems possible to the authors of this article: to declare that there is no room in the party and Komsomol, nor in the activ of trade union and public organizations for persons who abuse alcohol and behave so as to bring discredit on the dignity of a Soviet citizen.

We also regard the following as advisable in stepping up the fight against alcoholism:

i. to organize a temperance society, to enhance the responsibility of the management of enterprises and institutions for allowing persons to work in an inebriated condition; to deprive persons discharged for violating work discipline

as a result of drunkenness of the right to continuity of pensionable work service; to expand the practice of allotting workers and employees with families plots of land to organize collective gardening, above all around industrial centers; to stimulate in every way use of space in schools (outside of class hours), clubs and other space, as well as restaurants, including institutional dining rooms, for hobbies according to their interest: technical creativity, handicrafts, building boats and the like, and also for dances and evenings of amateur performances, making sure to give moral and material motivation to personnel of schools and clubs so that they offer maximum use of the space to young people living in the neighborhood;

ii. in order to optimize the budget of young workers and to encourage the accumulation of money over and above current expenditures for the purpose of obtaining durable consumer goods which are in short supply, to order USSR Gosplan and the USSR Ministry of Finance, in conjunction with the Komsomol Central Committee and the AUCCTU, to prepare recommendations on mass production of the use of credit through savings banks (under the supervision of Komsomol organizations) in part payment for automobile and motorcycle titles and certificates pertaining to durable consumer goods (motorboats, refrigerators, sets of furniture, and so on), as well as for cooperative apartments for young people;

iii. to order the USSR Central Statistical Administration, jointly with the USSR Academy of Sciences, the USSR Ministry of Health, the AUCCTU and the Komsomol Central Committee to conduct special research in the 1974-1975 period into the socioeconomic consequences of alcoholism, enlisting party, Komsomol and trade union activists to take part in this work.

Legislation and Labor Resources*

In our view there is no doubt whatsoever about using the law as an instrument to improve the quantitative and qualitative characteristics of labor resources as a whole. But for that instrument to be effective, a correct determination must first be made of the direction it is to take in each of the spheres under consideration. The influence of the law is extremely great, beginning with the "strategic" questions, among which we should include the problem of demographic policy insofar as it is concerned with affecting the birth rate, and ending with such present-day issues as reducing personnel turnover, reducing sick leave, and so on.

We will examine here only those directions which are basic and which in our opinion are the most realistic ones, those in which the influence of the law on labor resources can prove to be most effective.

When To Get Married?

We should note that present-day legal standards make it very problematical to exact support from the natural fathers of children who are not born in a legally constituted marriage. Combined with the very low (by comparison with the wages

* Reprinted with abridgments from the publication KHOZYAYSTVO I PRAVO, No 2, 1978.

obtained) tax "on bachelors," this principle has the result that many young men who are natural fathers pass on almost all the expenses of bringing up and supporting a child to the mother and the state (in this case we are referring only to material costs, though losses of a moral nature are far more considerable and dangerous to society). These are substantial expenditures, and only the interests of the children can serve as a justification for them. This "freedom" of obligations to society and the family, when taken together with certain other conditions, has the result that more than 20 percent of young men between the ages of 25 and 29, i.e., when they have already served in the armed forces, have obtained their education, have acquired their occupation or profession, are not married (according to the 1970 Population Census). By now this percentage has risen still more according to an expert evaluation. Thus a substantial portion of men are spending their young years as bachelors, which has adverse consequences, both economic and social, for the entire society. As Professor B. Urlanis has rightly noted, "lacking a family, a young man is far more apt to slip on life's road, to develop a weakness for alcohol, to break the law. The family serves as a powerful stabilizer of social tension.*

In view of the present level of acceleration of young people and from the medical and socioeconomic standpoint the optimum age for marrige is between 22 and 24 for grooms and between 20 and 22 for brides. But it is the relative share of the male portion of young people not marrying that is very high; among men over age 20 the average marriage rate in our country is only 80, and the average age of marriage, though it has been dropping rather substantially (for example, among men the average age of marriage dropped from 29.3 in 1976 to 25.1 in 1974, while among women the drop was from 27.2 to 23.4),** still is not reaching the optimum.

In this connection it is worth turning attention to the fact that in the European socialist countries the average age of marriage is now lower than in the USSR. For men it is 24.9 and for women 21.7, while in the capitalist countries of western Europe the ages are 25.8 and 22.9, respectively, and in the United States they are 23.3 and 20.6.***

Thus, while noting the drop in the average age of marriage in recent years as a constructive fact, we need to admit that it is still not enough. We would also like to call attention to the fact that according to the data of microsurveys of student families the social responsibility of young people who are marrying is rising, and this is specifically manifested in a rise in the level of academic progress.

For the sake of fairness it should be said that there are many circumstances involved in delaying legal marriage. Incidentally, we might include among them the procedure whereby the administration of educational institutions does not furnish separate rooms to students who marry, is not building dormitories for

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* "Molodaya sem'ya" [The Young Family], Moscow, 1977, p 11.
** VESTNIK STATISTIKI, No 1, 1967, p 94; No 12, 1975, p 89.
*** M. V. Kurman, "Aktual'nyye problemy demografii" [Current Problems in Demography], Moscow, 1976, p 33.

married students, and so on, though in many educational institutions such possibilities exist. A similar situation not uncommonly is observed in dormitories for young workers.

The Law and the Birth Rate

At the 25th CPSU Congress L. I. Brezhnev, general secretary of the CPSU Central Committee, pointed up the need to work out an effective demographic policy. One of its tasks would be to devise a set of measures, including legal measures, that would motivate having the second and third child in the family (from the demographic standpoint the existence of two children is insufficient to guarantee expanded reproduction of the population and consequently expanded reproduction of labor resources as well). If the necessary growth of the population is to be ensured, there must be more than 258 children for every 100 couples (according to the calculations of Professor B. Urlanis).* But the law in effect was actually aimed at extending material assistance only to families with many children.**

Yet the law's principal function, which justified its existence not only in wartime and in the postwar period, but also in our own time: aid to large families in bringing up their children, has not been altogether lost by any means. Those authors would seem to be incorrect who offer a one-sided treatment of this legislation as "aimed at encouraging the maximum number of children in certain families (ethnic areas), whereas the demographic situation in the country dictates that it be aimed at guaranteeing the requisite minimum of children in a majority of families."***

There is no question that the last part of the assertion is correct (i.e., that the demographic situation "dictates" ... in concrete terms, that legislation must give maximum incentive to the birth of the second and third child, and--we ourselves add--not the fourth and fifth). But there are hardly grounds for asserting that the present law stimulates a higher birth rate. At the same time its principal function--assistance in bringing up children--should not be lost, since that would worsen the situation of families with many children. And if there is some point in improving that law, there would obviously be justification for reassessing the very principle of increasing the amount of aid, setting a new and much higher rate of assistance for the second and third child as compared to the rate that applies to the fourth child and subsequent children.

The Adolescent and the Workplace

Let us examine the question of the lower limit of the working age (the minimum working age). Some authors assert that ... "the lower limit of working age (16) has been established in law so as to take into account the adolescent's physical

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* "Molodaya sem'ya," p 7.

** The reference is to the ukase of the Presidium of the USSR Supreme Soviet dated 8 July 1944.

*** G. Litvinova, "Effect of the Law on Labor Resources," KHOZYAYSTVO I PRAVO, No 12, 1977, p 63.

and intellectual development." And further: "It was envisaged even by the first party program of the Bolsheviks, was set forth in the 1918 RSFSR Code of Labor Legislation, and today, in the context of the shortage of labor resources, sufficient grounds are lacking for legislation to increase it."*

In what direction should the change of the minimum working age take in the future? It seems to us that as working conditions become easier on the one hand and the acceleration of young people occurs on the other, that the minimum age of entering the group of labor resources could be reduced to 15. To this we might add that expanding labor resources by virtue of the adolescent generation is important not only from the economic standpoint, but also from the standpoint of training to prepare the citizen of socialist society for life.

The present-day technology and organization of production in industry, agriculture, and also the service sphere not only permit, but in many cases even guarantee the most effective use of live labor when combined use is made of manpower: men, women and adolescents.** But we cannot but see that along with the factors favoring a drop in the minimum working age, there are also factors operating in the opposite direction, one of which is the need to increase the length of general-educational preparation for work. Overcoming this contradiction presupposes first of all that education begin earlier. In the prewar period school began at the age of 8 or 9. In most of the most advanced countries elementary education now begins at age 7, and in certain countries it begins at age 6 or even age 5. There are elements of this kind of education in our country as well in the older groups of preschool institutions. Thus increasing the length of education would seem to be accounted for by beginning it earlier.

At the same time earlier commencement of education comes up against a very definite and tangible limit, so that the problem cannot be altogether solved by this method alone. It would seem that a different fundamental solution lies in combining education with work. This can be done either through the form of actual combination in the system of vocational education (for example, 3 days of school and 3 days of work), or by combining work with evening school, in which case, of course, the length of the workday would be limited, as it already is in our case for adolescents. But this is now done only as an exception, in the form of the workday that lasts between 4 hours and 6 hours. Incidentally, we are the only country, even among the socialist countries, where the labor of 15-year-olds is prohibited both in industrial and also nonindustrial enterprises, in agriculture and in the service sphere.

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* G. Litvinova, op. cit., p 64.

** Given the present-day specialization in types of labor and production, in many cases we distinguish not only "men's" and "women's," but also "young people's" occupations within a particular group. For example, high-climbers among men and assemblers of electronic devices among women. This identifcation of occupation may occur within an enterprise (organization), just as it may encompass the entire enterprise or even a group of enterprises and entire sectors of production and labor.

What often happens at the present time? This is what happens: During his 16th and 17th years the child, the adolescent, the young person only takes, only receives. Where is he to get the habit of giving, the elementary habit of caring for others? It is created above all by sensible work training in the family, which unfailingly includes not only predominantly mental work, but also physical work as well.

As our society undergoes its social development, there is also an essential change in the social function of secondary school. As V. I. Lenin defined it, the Soviet school must be a truly polytechnical school, a school of work. This requirement has always been acknowledged by Soviet pedagogy. But in various stages of development of the secondary school it has not always been interpreted the same way by any means.

For example, the practical arts shops were closed in the overwhelming majority of schools in the first years after the return to 10-year schooling (1964) because of the shortage of class time and funds for production training. By the end of 1977 only a small portion of them had been reopened. The school curricular originally gave 6 hours of class time a week to work (aside from optional courses, i.e., production work training outside of class hours), and in subsequent years the education ministries of the union republics have reduced to one-third this form which was already small.

For this and certain other reasons work has not had the place it should have in the life of schoolchildren.

The practice of combining the studies of schoolchildren with work has had two essential shortcomings: it embraced only a small portion of the students and took place primarily during vacations, and moreover was done mainly in rural schools. In the city schoolchildren in the upper grades not uncommonly turned the vacations into an empty killing of time, which had a bad effect on the children, especially on the "difficult" adolescents.

There has been a corresponding shortcoming in shaping socialist work discipline, though a great deal has been said and written about work training. Usually there was no discussion, say, about the proposal that children should be taught in school to handle business correspondence, typing, driver education, to use calculators, but only a small portion of the students have mastered these operations (for example, driver education has been adopted in only 3,000 of the nearly 100,000 partial secondary and daytime secondary schools for general education).

Often the point of departure in discussing and resolving the questions of actual participation of schoolchildren in work has been the promise that since learning itself is creative labor that introduces the schoolchild to the sphere of knowledge and prepares him for subsequent occupational activity, there is supposedly no need whatsoever for actual occupational activity during his studies in secondary school. In the absolute majority of schools such work has at best been allowed only during vacations.

But the demands of contemporary life have refuted this approach to occupational work, and progressive know-how has made extensive inroads for itself.

Recently the CPSU Central Committee and USSR Council of Ministers adopted a decree entitled "On Further Improvement of the Education and Training of Students in General Secondary Schools and Their Training for Work."

That decree emphasized that "the present organization of work education, training and vocational guidance of secondary students does not meet the higher demand of social production and scientific-technical progress. Many graduates of secondary schools enter life without the requisite work training, do not have an adequate idea of the principal common occupations and experience difficulties in making the transition to work in the economy."

If a radical change of direction toward mass participation of secondary school students in socially useful work is to be accomplished, there will have to be a very rapid expansion of the physical plant for work training, and that training will have to undergo a serious organizational shakeup. This was fully covered by the decree we have mentioned. It states: "In the context of the conditions of the urban and rural school, comprehensive use should be made for work training of the training shops of enterprises, interschool production training centers, apprentice work teams and other work associations of secondary school students, vocational and technical schools, school shops, laboratories and display rooms. The students shall be provided regular free transportation to the places where they do their work exercises. New work training programs are to be compiled for all grades, along with the relevant manuals on teaching methods."

It is also highly important that the time for work training be increased from 2 to 4 hours per week in grades 9 and 10 (11), in accordance with the decree. Interschool production training centers are an especially promising form of bringing secondary schoolchildren into contact with occupational work.

They are set up to improve work training and to improve the choice of occupation by schoolchildren in the 9th and 10th grade. In actuality they have considerably broader capabilities. Secondary school students can choose any of the specialties in which training is given. Once a week during the school year the children learn the elements of the worker occupations under the supervision of highly skilled instructor-craftsmen, and at the same time they earn money making real products which are needed.

Aside from that, the knowledge and habits obtained in the shops afford the 10th-graders the possibility of working on their own part of the summer following the workplace practical training: for instance, as store clerks, telegraph operators, packers, carpenters, and typists. No longer is this merely vocational guidance of young people, but it also gives them social guidance; in a year a majority of them will be taking up jobs in the economy.

Without diminishing the fault of the family and the school, we still should not forget about the role of labor legislation and practice as it has taken shape. At least half a year passes on the average between graduation from a regular

school or vocational and technical school and conscription into the armed forces. As a consequence enterprises use various pretexts in trying not to hire the young graduates before they have been called up, or in trying not to give them places in accordance with the specialty they have acquired. Which means that the occupation is not reinforced before they are called up into the armed forces. Nor is the situation any better in agriculture. On 20 April 1976 PRAVDA rightly remarked that the instruction on having students of rural vocational and technical schools go through production training based on outdated labor legislation unjustifiably delayed commencement of actual work.

As a matter of fact, when the training of machine operators lasted a year and service in the Soviet Army began at age 19, school graduates managed to master their occupation in practical training. Now, when a sizable portion of young people spend 3 years studying in the vocational and technical school and acquire not only an occupation, but also complete secondary education, they do not receive even the minimum length of work service and experience (not as trainees in the vocational and technical school, but as workers).

Kolkhozes (or sovkhozes) pay a monthly stipend (nor is it a small one), they spend more than 2,000 rubles for every student during training, and they have a right to expect that he will give them the help he is capable of even while he is going to school. Those who graduate both from the vocational and technical schools and also regular secondary schools, once they have acquired training as machine operators, wait to be placed in jobs, but legislation does not allow persons under age 17 to operate tractors and complicated agricultural machines.

It would seem that age restrictions of this kind, especially if we take into account acceleration of young people, are somewhat outdated. It is well known that over the last several decades an acceleration of the morphological development of young people has been observed.

Among rural secondary school students in UkSSR, for example, the average [annual] gain in height among children between the ages of 7 and 15 was as follows in the period between 1957 and 1967: 2.67 cm for boys and 3.23 cm for girls. Though figures on acceleration of mental development are less accurate, they are still sufficiently definite. In the judgment of a majority of professional psychologists mental development of young people has speeded up by approximately 1.5 or 2 years.

Another reason why it is so important to take into account the possibilities of speeding up the introduction to work of secondary school students in the upper grades is that the economy's need for highly skilled workers, whose share has been growing at a very rapid pace, has been growing as the problem of labor resources has become more acute and as the scientific-technical revolution has undergone its very rapid development. Meanwhile no radical change has yet occurred in people's consciousness (either in young people who have graduated from secondary school or their parents) concerning the attitude toward work, especially toward physical work in the sphere of material production.

To some degree this is the result of labor legislation's failure to take into account the processes of acceleration.

Unfortunately many officials in public education, referring to the fact that new forms of work training and actual participation of secondary school students in work, require pedagogic analysis, have delayed for years in using and disseminating the advance know-how.

Fuller Use of Occupational Experience and Qualifications

Now we will move on to the question of the effect of the law on the length of the work life of elderly persons. In the present classification all persons between the ages of 60 and 75 fall in the postworking (retired) age group. At the same time a substantial portion of them--about 80 percent in the first 5 years of retirement and about 30 percent in the second 5-year period of retirement--retain all or part of their ability to work.

However, the present level of participation of elderly persons in social production is still low. The reason is not so much the lack of material and moral incentives as the absence of the necessary legal and organizational conditions that would make it possible for them to be attracted into social production. (At the present time 99 percent of old-age pensioners who are working work a full workweek and a full workday, and as a rule they have the ordinary working conditions.)

According to our computation, based on the published data of the 1970 Population Census, approximately 28 million workers (mental workers primarily) of the 115.2 million persons employed in the sphere of social production are not covered by the legal standards now in effect concerning material encouragement of the work of retired persons: remuneration along with the full or partial pension benefit. In the context of the scientific-technical revolution it is especially important to lengthen the work life of persons employed in occupations requiring the longest training. As a rule these are mental workers with high qualifications: scientists and educators. As we know, these occupational groups have been increasing in our country at the highest rates. For instance, over the period from 1940 to 1976 the number of persons employed in science and scientific services increased more than tenfold, whereas throughout the national economy the increase was threefold. We should also note that the cost of training scientists and teachers is higher than that of any other profession.

Increasing their work life in the sphere of social production is an element of compensation for later commencement of the work life of these specialists. But this is possible only if an appropriate employment policy is conducted.

Science offers the most vivid example of the main direction for increasing the working life of the population, which is beneficial from the social standpoint and highly efficient from the economic standpoint. As a result of the lengthened professional work life of scientists, even now the overwhelming majority of them do not retire not only when they reach the general retirement age (age 55 for women and age 60 for men), but not even when they qualify for the substantially higher (one-third) pension afforded at a later year to those who

have the academic degree of doctor of sciences (5 years later).

Solving the problem of the most efficient use of the elderly population requires a further increase in its mobility on the basis of improvement of labor legislation.

That improvement must be thoroughly thought out so that the shifting of elderly workers does not take the form of a disguised dismissal but, on the contrary, so that it is aimed at supporting work, which is such a complicated vital impulse, so that it is seen to be an extension of their work lives.

Thus the matter consists of using the law to manage the process of formation of the age-specific composition of vocational groups, which is altogether possible in the context of a socialist society whose development is planned and, in particular, on the basis of the biotechnology of age and appropriate material incentives.

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