

EDUCATION AND GLOBALIZATION
(Russian Educational System in Conditions of Globalization)

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Abstract. This is a survey of events which happened in Russia during the transition period and of their consequences on the Russian educational system. It treats subjects like the role of money for education, aims of education, stratification of education in conditions of globalization, and relationship between education and economy. Finally, the problem of “brain drain” is considered.

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Introduction

Two psychiatrists met once and one asked the other:

— Where did your patient suffering from prosecution mania vanish?

— He almost completely recovered, and just then he was killed.

A similar thing may happen to our Education. Today many people are trying to rescue it, to prevent its destruction. We are on the verge of saving it, but I am afraid that by that time the Russian education will be completely destroyed.

That reminds me of another old story. At the dawn of the Cold War that immediately followed the hot war, in the United States there appeared Secretary of Defense, Forrestal by name (I probably doubled the wrong letters in his surname). The secretary got mad and jumped out of a skyscraper window shouting, “The Russians are coming!”

He certainly was ahead of time. And we are already late.

The Cold War is over. Gorbachov, in the company of Yeltsyn, signed the act of complete and unconditional surrender. The Soviet Union suffered a complete defeat and was erased from the political map. Marauders were the first to appear in the wide expanses of the wonderful and defeated Motherland, and grabbed and stole whatever they could lay their hand on. As to the winners, they began the usual, routine “winner job”—sharing, governing, and reconstructing the captured territories. By the way, the idea does not belong to me. This is what they think and say in America, “And what did you expect? Winner, as is well-known, gets all!”

The Americans seem to have seriously decided to tackle our Education. It is probably the final defensive line, and if they break through here, that would be the end of Russia.

*This is the last paper of I. F. Sharygin (1937–2004). We thank his family for admitting us to publish this English translation of the paper.

1. How much money does education need?

In December 2003 Russia elected the State Duma. It is astonishing that not a single political party spoke seriously about Education in its Program statements (by the way, these parties did not have intelligent programs at all). And it is really strange. School education is something that concerns each Russian family directly or indirectly, is it not? The population of the country, called electorate in terms of election campaign, adopted the basic principle of capitalism: an individual survives (and dies) alone. Many families associate survival with giving good education to their children and grandchildren. (In the brackets, and not quite to the point here, as I am actually jumping ahead, I would like to say that the people in Russia are now led to believe that it is only abroad that they can get good education).

Actually, they did speak sometimes about Education during the muddled election campaign. But a very limited range of questions was discussed. They sighed and expressed their regret at the penury of the teacher, were appalled by the miserable condition of school buildings. But the pivotal and vital for Russia questions—the aims and the contents of Education—remained untouched.

Here I would like to express an almost blasphemous idea: today the financial position of educational system employees is not so miserable as they keep saying (from the deep-rooted habit of going with outstretched hand). This refers both to teachers, and especially, as could be expected, to the management personnel, both in Moscow and in the provinces. Financial streams flowing through the system of Education in Russia are great enough for our country to have one of the best (and probably the best in the world) School Education, especially if we take into account the traditions and experience of Russian education. I am not speaking here of how the above-mentioned financial streams are formed. It is also interesting to see how they are distributed. But let us leave these questions to the so-called competent state bodies, though they often prove incompetent in such cases for some reasons. As to me, I am just going to add to the first blasphemous idea another one, even more blasphemous. The lack of money makes Education poor (an unintentional play on words). But big money is a catastrophe for education. This statement concerns, in my opinion, Russia (first and foremost), but it is highly probable that this law holds true for the rest of the world. Big money attracts ignorant uneducated swindlers and crooks, and they oust, quickly and altogether, true professionals, zealots and devotees, from the system of education. And without them Education cannot exist.

But I am not going to develop this idea, all the more so because I have already, unintentionally, skipped the very beginning of my considerations.

2. Three branches of education

Let us start at the very beginning.

What is Education, in the sense ‘the System of Education’, and not just ‘being instructed about how to do something’ (for example, how to organize a party) or ‘learning some news’, good or, god forbid, bad.

I am trying to think about it, and probably because I did not get a good pedagogical education, I am trying to force an open (could it be still closed?) door. All right, we are as clever as others.

In education, as it is well known, there are two major stages: Secondary Education (school) and Higher Education (college, university). Secondary Education (“secondary” not in the sense ‘less important’, but ‘related to the education of children approximately between the ages of 7 and 17 years old’) can in its turn be divided into 3 stages: Primary school (primary or elementary education), Junior High School (incomplete secondary education) and Senior High School (secondary education). The process of getting education at the initial stages is actually a result of teaching, instruction. Education is, in a certain sense, a result of teaching.

The teaching stage is an essential stage in the life of many animals, of practically all the birds and mammals. A badly-taught animal is doomed to death. Thus in the animal world there is no skiving or slacking.

This is not the case in the *Homo sapiens* world. It is true that at the initial stages of education all the children study honestly and conscientiously, the results of teaching are tangible and can be observed practically every day, while at the later stages of education we often come across imitation or even falsification of education.

The System of Education is a notion that, in a sense, defines itself (like the notion of “the greatest common divisor”). Ideally, the System of Education should help an individual to determine an optimal trajectory of development and of getting Education on the entire way from the moment they get into the system up to the moment they leave the system (and sometimes even to impose the trajectory on those slow-witted).

Speaking about the System of Education on the whole, we can single out three varieties or, if you like it, three facets of the same medal that we call Education.

They are real Education, declared Education, and potential Education. It is only the third facet that needs explaining, as the meaning of the first two is rather clear. By potential education I mean the highest level of education that a country can provide and for which it has the relevant specialists, literature and traditions. Thus, for example, not long ago we stated that Russian mathematical education was the best in the world, and it was really true: not long ago it was its real level; however, today this statement is only true on the potential level, if we keep in mind the potential of specialists, literature and traditions, which has not been lost yet.

But if we take economic education as an example, then no matter how often we have declared that its level is high, its real level is not in keeping with the potential available in the country. The leading experts on market economy are (at best?) representatives of the Soviet economic school who defended the advantages of planned economy over market economy and of collective farm agricultural system over private farm agriculture in their dissertation papers, or (at worst?) specialists who got education in Western, mainly American, universities and who do not have the least idea of Russian specifics. And until a new economic school is created in Russia, it will be impossible to speak about the availability of adequate economic

education in our country.

The overall potential level of the System of Education is determined by the potential of the two fundamental, or pivotal, or system-forming subjects. Such pivotal subjects for Secondary education are, in my opinion, the following two: mother tongue and literature (I treat them as one subject, which is not quite correct), and mathematics.

An important achievement of the Soviet Power—I speak about the period when it was at its prime—was a high level of real education, which actually coincided with declared level. This statement does not refer only to mathematics and natural sciences. In the Soviet Russia the teaching of the Russian language and literature was very well organized. The most recent Soviet literature, good literature, has grown out of a school literary composition.

Today the level of real education has sharply dropped and keeps falling intolerably fast. The causes are numerous. I would like to single out just one cause, one of the most important. In today's Russia there is a complete lack of positive interdependence between the quality of education and personal success in life. On the contrary, the dependence is negative. Personal connections and unscrupulousness—these are the basic means of achieving success. As to Education, knowledge is not necessary: it is important to have a certificate of education, a diploma. And it does not matter what kind of diploma. An ignoramus with a diploma moves up a career ladder faster and more successfully than a well-educated professional. This degradation began when the Soviet power was drawing to an end: it was possible to come across an electrical engineer who did not know the Ohm law. And today the situation is on the verge of absurdity. A person who graduated the evening department of the Moscow Road Transport Institute becomes Prime minister. And if one wants to become a millionaire, then the best thing for him is to have no education at all—not even secondary education. Apropos, how are things abroad? It turns out that the richest man in the world—Bill Gates—does not have a formal education.

An attentive reader might observe a contradiction between the last passage and the above-made statement that many families in Russia today connect the future of their children and grandchildren with good education. Yes, the contradiction is evident. And the author cannot explain it logically. It is probably Russian idealism that is behind it: Russians have not yet lost their naive belief in learning. Learning is light. Learn, son, it'll make a man out of you! It is the only hope of getting rid of poverty.

3. The aims of education

Almost a decade and a half has passed since the change of the social system in Russia. All through this period of time the system of Education is being reformed, radically at that. But up to now the new rulers (all the familiar faces!) have not formulated, clearly and precisely, the basic aim of education. Basic, naturally, from their point of view.

... And here a strange idea has come to my mind. I am trying to get rid of it, but it keeps coming back. What if the aim is such that it just should not be made public?

And, generally speaking, what is the aim (what are the aims) of the System of Education? First and foremost, of school education. The most general aim, irrespective of the country (or even probably, the global aim of education)?

The aim of education (in my opinion) is the reproduction and development of a social system, the system that exists in a definite country. Naturally, different layers of population may have different aims, and the difference may be considerable. But it is possible to assert generally that according to the living standards of the bulk of the population the main aim of the System of Education is either the first or the second, either reproduction or development.

Naturally, it is here that the aims of education in highly-developed countries and in backward countries (simply speaking, in rich and poor countries) diverge. It is also natural that any attempt of an underdeveloped country to imitate the educational system of a highly-developed country would lead to the preservation of the existing hierarchy among the countries, which means that it is strategically advantageous for highly developed countries.

On the other hand, between the above mentioned aims, or to be more exact, two sub-aims, there is a certain antagonism, or, as it was once customary to say, dialectical contradiction. If we want the System of Education to become a means of developing a social system, it is necessary, first and foremost, to develop the System of Education itself, and to raise it to a very high level. But in this case a serious threat may be created to the existing balance in a definite society, to its social structure. A good, comprehensive, equally accessible to all social layers, free Education that gives an individual scientific knowledge and enables creative development is dangerous to the ruling circles (classes). Social unrest and uprisings very often start among the students. In prosperous France any creative initiative displayed by pupils is most decisively nipped in the bud. At mathematics lessons, for example, pupils should solve tasks by following given patterns, they are not expected to demonstrate their smartness.

But if a country (the authorities of the country) under the force of circumstances, often external, still sets the task of developing the system of education and of developing an individual by means of the system, then it is very important to determine the exact direction of the development, to delimit it with well-defined borders. Thus, for example, communists-Bolsheviks began by destroying the Russian bourgeois educational system, but very soon (sooner than the present authorities) they realized that they had taken a false step, and began to energetically develop the System of Education, on the basis of the best achievements of the System of Education in tsarist Russia. The hostile capitalist world made them do it. And we should thank it, that world, for that.

It is necessary to add that the Capitalist World, confronted by an immediate threat to its existence embodied in the Soviet Union, was forced to change considerably its social policy. And probably thanks to this threat Western civilization

managed to avoid another, more serious and covert threat, or even a catastrophe that could have broken out already in the 20th century if the world had continued to exist according to the internal laws of capitalism and the market. By the way, this is a matter to consider for those who are convinced that it if had not been for Lenin and the Bolsheviks, Russia would have been a prosperous country already in the 20th century, and its citizens, all without exception, would have worn white trousers and spent their holiday on Hawaii (this is exactly the essence of life in a prosperous country in the opinion of the writer Victor Jerofejev, that he expressed in a TV program; well, nothing doing, writers match up with the epoch).

It is important that the communists managed to define exactly and to formulate simply and brilliantly, the basic aim of Education (the direction in which education should develop) for the Soviet Union: creating the army of engineers that would meet the most up-to-date requirements, on the basis of quality education, with natural sciences and mathematics as the basic subjects.

This concrete, though narrow, aim was very quickly achieved (thanks to its being very concrete), and the created System of Education has for a long time (to be more exact, for a certain time) contributed to the development of the Soviet system. But such narrow and concrete aims cannot be long-term aims. And when the necessity arose to formulate a new aim, the task was not fulfilled. The system continued to work in the same regime, in many cases, without any tangible result, eating away at itself and at many other things around it. This is, in my opinion, one of the causes of the depression and stagnation of the Brezhnev epoch. On the other hand, the creative energy that was being produced and let out by the system of Education, but that did not find use, was one of the crucial factors in the destruction of the Soviet system.

But I am again making a digression and getting off the point. I am going to come back to the subject. And now, let us go on and discuss a different matter.

4. A new system

What do we see today?

Today an intensive globalization process is taking place in the world. The process has, as might be expected, two sides. A good one, and not a very good one. The process is caused, above all, by the modern information technologies and means of communication. The most distant corners of the planet are mutually connected by high-speed data transmission and transport communications, while the benefits of civilization penetrate into the most far-off corners and wilderness areas. The Mankind has got great possibilities for a decisive leap in the development, in the improvement of living standards of all the people without exception. But for this to happen it is necessary to have morality, equality, and justice as the guiding principles in the relations between people and countries. Unfortunately, the principles of market and money, that have become the only regulator of all the relations today, are immoral by definition (in principle!). Further on, when speaking about globalization I shall confine myself to the discussion of the negative aspects of globalization, as its numerous positive aspects remain to be only potential.

The globalization of economy, the creation of the common world market system led to a sharp polarization of the world civilization. As a result of a considerable difference of potentials between the poles there appear powerful flows: from one pole to the other there flow all kinds of resources, natural, human, intellectual, and in the opposite direction there flow ready products, and governing signals. The whole of the “added value” stays on one of the poles, thus increasing the existing difference of potentials. Unfortunately, the world is organized in such a way that all the profit from the sale of apples goes to him who does the selling. Those who plant and grow apple trees get the crumbs. Sometimes in order to raise efficiency they just saw down apple trees to make it easier to pick apples.

Globalization process does not take place only in economy. It affects all aspects of human life: culture, science, sport, legal relations, crime. Globalization is taking place according to a uniform scheme. Market laws and mechanisms oust all the other laws and mechanisms from human relations. Money becomes the only criteria of result. And here the famous folk rule holds: money makes money. All is like in poker: it is impossible to defeat a rival whose capital exceeds yours by order. And after each game the difference in the capital is sure to grow.

The system optimizing a single linear objective function always slides (moves) to the limit of its existence domain. The attempts to improve the market mechanism with the help of various anti-monopoly laws give local and temporary results. Globalization process is actually a return to the double standards that were in force when the Soviet Union existed. A return both *de facto* and *de jure*. Only at that time the dividing line was ideology, and today it is the size of the capital.

Globalization is accompanied by drastic polarization of countries and by polarization inside each particular country. This internal stratification is especially noticeable in economically backward countries. A kind of VIP-democracy, in fact, a new feudal system, is developing. New social classes-castes appear: the aristocracy, the servants, and the rubble, and these classes do not, or almost do not, mix. Feudal principles are spreading all over the world: there are emperor countries, senior countries, vassal countries, and the rest of the world.

But, probably, the system that is coming into existence is not feudalism, but an altogether new variety of system? A kind of post-capitalism slavery? Today we witness quite a lot of phenomena typical of late slavery. The aristocracy is not at all ashamed of displaying and satisfying their natural, physical, needs, as well as their unnatural, or perverted, needs in the presence of the slaves and the rubble. (In a New Year program of one of major TV channels in Russia one well-known Russian singer sang indecent folk songs, as if trying to accentuate the aristocracy’s disregard of the feelings of the common people.) It is necessary to give people *panem et circenses*. The cheapest bread, the most primitive shows. Real art is accessible only to the richest today. For common people there are good old gladiator fights. It does not matter that today’s gladiators are more often than not well-to-do people. They are, like in the distant past, sold and bought.

The society that is being formed is so far from the democratic ideals that another blasphemous idea comes to my mind. It turns out that if we stick to

strictly formal analysis, then Russia enjoyed the highest level of democracy during the Stalin dictatorship and for some time after the dictator's death. Education was free of charge and accessible to all, and all could study on equal terms (children of those who occupied the higher posts in the authorities went to the same schools as lesser mortals), the right to work, rest, medical treatment and dwellings was really guaranteed. The public transport was cheap, the art was accessible to all and it taught the good and the eternal. The Soviet people read more than any other people in the world. The assertion is not an invention of the Communist propaganda. All were equal even in front of the law which the dictator embodied. Yes, of course, there was no choice. But then they had elections. Well, now there is choice. But there are no elections. Is this better?

5. Stratification of education in conditions of globalization

However, the process of globalization does not run as smoothly as today's rulers of the world would wish. The greatest problem is: how to create a universal world Educational system that would fit the new world order? It is just Education that worries them most, as Science—a by-product of Education—was globalized in the first place. It didn't even cost much money.

But as to Education, nothing is simple. Here there are two problems, two contradictions that complicate the process of globalizing Education.

The first problem-contradiction consists in the following. Modern technical equipment that creates comfort and secures safety should be developed, produced and serviced. And the production and servicing requires a large army of adequately trained and educated employees and workers. The reduction of their educational level would lead to the increase of technological catastrophes, the number of which is otherwise dangerously great and is still growing. A considerable level of knowledge is demanded in the service sector of economy. Let us not forget about the Army. State-of-the-art and expensive weapons cannot be entrusted to a soldier that is not sufficiently educated. This is just one side of the problem.

On the other hand, globalization ideology also presupposes stratification of education. The ruling circles should be better educated so as to be able to perform the leadership functions competently; and in order to reduce the risk of social unrest it is necessary to limit the education level of the bulk of the population, respectively.

One of the ways of solving this contradiction, a way that naturally suggests itself, is stratification of educational system. Too branches of education are formed. Moving along one branch you get a comprehensive, fundamental education. This education is paid, and it is very expensive at that. The other brunch gives education which is probably not bad at all, but it is narrow and specialized. This branch of education delimits the functional possibilities of the pupils, and thus strictly predetermines their social role and position. At the same time certain most talented children have the opportunity to get good fundamental education irrespective of their social origins. In this way intellectual and genetic organization of society is brought into correspondence with its social organization. Of certain significance is

propaganda, ideological effect. New varieties of standard Christmas fairy tales, like *Cinderella* and *The Prince and the Pauper*, are created.

However, if we consider today's processes from the point of view of educational problems more carefully, then we observe not two, but actually four branches. According to the dichotomy principle each of the two branches discussed in the previous paragraph is in its turn divided into two more branches. This branching process can be continued, but I shall limit myself to the two upper (or depending on how our tree grows, the two lower) levels. On the uppermost branches there are, speaking both figuratively and literally, princes by birth. They inherit the highest social position, and therefore do not need education. As to the good fundamental education mentioned in the previous paragraph, it is for the children of the courtiers of the highest rank and of really wealthy people. Narrowly-specialized education is the third branch. Here the educational system is structured rather rigidly. It guarantees the necessary quality thanks to sufficient democracy and small capacity. And finally, the fourth branch is education for all, for the lower social layers. Members of the lowest caste should be able only to write and read, but not necessarily to count, as there are calculators and computers, they should understand the orders of their superiors, or to be more exact, their masters, and to obey them (in this respect the capitalist system is much more rigid and strict than the socialist system); they should be able to perform the simplest operations (press buttons, lay bricks, check the tickets at the entrance, etc.). And though this fourth branch embraces the largest part of population, it is not at all worth while discussing the fourth variety of education because of complete lack of education here. Therefore let us discuss in greater detail the first varieties.

Let us begin from the very top branch. It is not even for the elite, but for those who dwell in the heavens. The demarcation line is somewhere around about one billion dollars of personal capital. The number of such families is insignificantly small. A mathematician would say that the corresponding set has a zero measure, but the total capital that they possess is commensurable with the rest of the capital in the world. Here I would like to make a, not quite lyrical, digression. I am convinced that a person having 1.000.000.000 \$, to say nothing of tens of billion, at his personal disposal is socially dangerous. Nobody can feel safe in case of even a hint of a conflict with such a person (just remember the Kennedy clan). It's a blessing that most of us live far beyond the attention range and sensitivity zone of such people. In order to complete the digression I suggest that the reader should solve two elementary arithmetical problems. How thick is the sheaf made up of one hundred dollar bank-notes, with the total sum of 1.000.000.000 dollars? How much time will it take for an ordinary person to count the above mentioned sum of money? (Answers: the size—thickness or height—of the sheaf would exceed 500 meters, which means that it is taller than the Ostankino TV tower in Moscow). In my calculations I proceeded from the assumption that a sheaf of one hundred dollar bank-notes is not less than 0.5 cm thick. It will take more than a year to count the sum of money.)

Education and upbringing on this upper level is piecework. It is the concern

of numerous nurses, governesses and private teachers. Formally, the richest people of the planet can hire the best nannies, governesses and teachers to educate and bring up their offspring. But this is a formal or market approach. The professions of a teacher and of a lackey are incompatible. And no matter how friendly and how confident the relations between the teacher and the child of a high-ranking official might be, the whole arrangement smacks of lackey—master relationship, the attitude of servility remains, which means that the quality of education will not be high.

Let us go one step down. The branch of education marked number two is strategically an extremely important part of education. Here the future society elite are brought up: politicians, top managers, bankers. It is here that fundamental scientists are educated. Of course, the principles of selection for different directions are different, and to the disappointment of ideologists, they are not always determined by the market. Certain things, sometimes quite a lot, depend on capabilities. Still the system is trying to develop a uniform market mechanism of paid education by turning human talent into an element of the market. If you are poor, but clever, and if you would like to get a respectable education, look for a sponsor. It can be an individual or a state.

And, finally, the third branch, which corresponds to specialized system of education. Here narrow-range specialists get education or, to be more exact, are taught: engineers of various specialties, banking employees, programmers. The paradox of today's state of affairs in the world is that one can be a very good specialist in a certain very narrow spectrum of a profession, and remain uneducated at the same time. A good example of this is provided by the numerous representatives of the huge army of programmers (to say nothing about computer hackers). When you talk with them, you can be shocked by the discrepancy between a very low level of education and even insufficient intellectual development, on the one hand, and a virtuoso understanding of every nuance of the sophisticated computer world. However, not all of them know and understand the computer as a whole, some of them specialize in "iron" (hardware), others in "soft" (software).

Today's arrangement of the world is looking more and more like an ant hill. A species (that is not part of the elite) performs its own strictly determined functions, without having even the slightest idea about the connection of the functions with the activity of other species or about their usefulness for the activity of the community. And the system of education should teach and raise new generations, making out of them, by means of respective nourishment, workers, soldiers, servants, and so on, and thus limiting the personal freedom of citizens, while at the same time liberals and democrats shout about necessity to guarantee personal freedom.

However, I am sorry to say, Globalization, does not foresee the System of Education in the sense described earlier. On the one hand, there appears Educational Service Market, and on the other hand, a network of dosshouses with free or cheap meals and soup kitchens.

It goes without saying that the picture presented here is just an outline, a draft. But it seems that there are forces striving to adjust our world to the draft.

I would be glad to be mistaken.

6. Education and economy

And now let us turn to the second problem. World educational landscape does not quite correspond to the economic landscape. The system of education does not submit itself to market laws, it defies market government. And this is fraught with danger for the existing world hierarchy. But again, this is just—on the one hand.

On the other hand—Education is an element of the market. And under a reasonable approach countries that do not succeed in economy, but have a good System of Education, can use it, the whole of it or some of its parts, in the foreign market in order to improve their economic state. In conditions of globalization Russia could not only perform the part of a supplier of raw materials to the wealthy countries, but also to offer services of developing Education, for example, mathematical education, which, in the opinion of numerous experts, has been one of the best (even the best) in the world, and which is still in demand.

As a matter of fact, trade in Russian mathematical education is taking place all over the world, but it is just crafty individuals that get the dividends. These individuals misappropriated the intellectual property not belonging to them. It is possible to see a certain similarity here with natural resources (also misappropriated): in both cases there are rentals, natural resources rentals or intellectual rentals.

Recently the attention of mathematicians and experts in the field of mathematics education has been focused on Elementary Geometry. And, in my opinion, Russia plays the leading role in this field. It seems that it is just in geometry that the Euro-Asian character of the Russian culture finds its adequate expression. In the history of Geometry two branches can be clearly discerned: the Western branch and the Eastern branch. The Western geometry was based and developed on the postulates of Euclid and later—on the postulates of Descartes. It was based on exact logical constructions, systematic approach, and general theories. Eastern geometry was visual and descriptive. Geometry was an element of Culture, Art, and even Cult, rather than a science. These two branches intertwined in Russia, as Russia served, geographically and geometrically, as a bridge between the West and the East. The very position of Russia favored the development of Synthetic Geometry, which especially attracts specialists today. And I am convinced that we occupy the leading position in the world in the field of teaching Geometry. We have something we can offer the world. We still have it.

But market opportunities of Education are not reduced to trading in its elements in the market, in the home market, but especially in the foreign market. A normal market pattern should include Education as one of the elements of the pattern: money, education, science, production, goods, money (money, goods, money, according to Marx). But in this chain education is at the very beginning and very far from the final money. Globalization does not make it possible to completely realize the pattern, the market cannot wait. Today the basic pattern is: money—money, to be more exact, money—money. The market destroys education in the

first place; it does not destroy one branch, but the whole of the tree on which Civilization rests.

These two circumstances—the disagreement between the organization of the World Educational System and the economic organization of the world, and the market possibilities of the Educational System—determine that the only remaining superstate seeks to take control of the World Educational System. And first of all—of the mathematical education, because it is the mathematical education that is international by nature, and exerts the greatest influence on the development of the Earth Civilization. And therefore one should not be surprised that the leading positions in different international structures that are concerned with the problems of mathematical education are occupied by the representatives of this particular superstate, in which, as is the general opinion, the mathematical education is but the worst in the world. In this worldwide educational market the usual market mechanisms operate. The stronger and the richer do not let the weaker and the poorer in, though the product quality is better and the price lower. And the strong, as a rule, are not scrupulous about the means.

7. Ideological occupation. “Tower of Babel problem”

There is one more circumstance related to Globalization and Education problems. It has little to do with the market, but is unusually important. The point is that the System of Education, above all, school education, also performs a very important function—that of upbringing, first of all, ideological upbringing. A good slave is a convinced slave, he is instinctively aware of his master’s superiority. Such a slave will not rebel. But such a slave should be nurtured ever since childhood.

Ideological aggression that the whole world is exposed to by the last remaining superstate is unprecedented in the world history. Its result is an almost complete ideological occupation. This is a very interesting subject, but it goes beyond the subject matter of the present paper, so I shall try to be short and stick to the point.

The situation in the world gives rise to doubts as to whether cold war is over, and, which is more important, as to who won and who lost. It seems that there is only one winner. Many are those, including the former enemies, who try to ingratiate themselves with the winner. But their efforts are doomed to failure. The rest of the world is nothing but the occupation zone.

As to the methods of governing the occupied territories, the most important elements here are the dollar and the language. The opposition ‘the dollar *versus* the euro’ that has been recently observed is nothing but the younger brother’s attempt to increase his role in the family budget, though the attempt has not been prepared well. However, the finance questions are obviously outside my competence, just as they are outside the problems discussed here. As to the language expansion, it immediately concerns the problems of Education.

First of all, the slave should know the language of the master. It is desirable that the knowledge should be limited to understanding orders, answering the simplest questions, and so on.

Besides that, the common economical, intellectual, technological, and cultural space requires a common language. Today the role is performed by the English, to be more exact, American language. It is difficult to say with certainty whether it is good or bad. Generally speaking, it is both good and bad, as are all large scale phenomena. The tower of Babel collapsed because its builders spoke different languages. Today we have another tower of Babel, but turned upside down. This position is far from stable.

The majority of people living outside the English-speaking world (I wonder if there is a non-English speaking world?) and regarding themselves as members of the intellectual community, as well as many other social groups, take the situation for granted and learn the English language, though only few people manage to master the language. What are the consequences? A great scientist, the Nobel prize winner Vitaly Ginzburg tells newspaper reporters his life story in bad English. Intellectuals find it indecent not to know English. Practically all international conferences and congresses have English as their working language. I treat our Chinese colleagues with great respect and sympathy, I like the firmness with which they defend the interests of their country, but I was unpleasantly surprised when at the opening of the World Mathematics Congress in 2002 in Peking all the speakers, including the members of the government, spoke English. However, one could only guess it was English, because it was next to impossible to understand what they said. Besides that, for a mathematician it is rather easy to master English well enough to discuss professional problems with the colleagues, as mathematics itself is actually an international language. As to Humanities, for example, Pedagogy or Teaching Methods, the situation is quite different. As a result, discussions have practically disappeared at international conferences and congresses on education. A good example of that is the 9th Congress on Mathematical Education in Makuhari (Japan). It is very difficult to express oneself in a foreign language on delicate questions of Teaching Methods and psychology of education, especially if we keep in mind that it is not always easy to put your thoughts into the words of your mother tongue. It is not easy to understand correctly an oral statement in a foreign language, especially when a disputable problem of Pedagogy or Teaching Methods is discussed. Sometimes it is difficult to understand even texts on the problems written in your native language. It is almost impossible for a person who does not think in a foreign language to discuss any problem effectively with a person for whom the foreign language is a mother tongue. Besides that, the most dangerous thing is not lack of knowledge, but insufficient knowledge. It is bad if you do not understand your interlocutors. But it is much worse if you understand them in the wrong way or if you attribute your opinions to them.

No matter how great an expert on teaching mathematics you might be, bad command of English prevents you from being elected to international committees and groups on problems of teaching mathematics. One of the most democratic principles—the principle of equal opportunities—is again violated. Thus, for example, if you are born in Russia, you have to learn English, otherwise you are considered to be badly educated, uncultured, and your career prospects are very limited. While at the same time an American does not have to bother learning a

foreign language and nobody would accuse them of being insufficiently educated or not cultured. It is not fair!

Besides that, different people have different aptitudes for learning a foreign language, while the aptitude itself is not included into a set of professionally relevant aptitudes. I, personally, think that it is not very useful for a professional writer to have a good command of a foreign language. To refute my claim you can mention Nabokov or Brodsky. They are considered to be bilingual writers. But as a matter of fact, they are a convincing confirmation of my thesis. By the end of his life Nabokov practically stopped writing in the Russian language. The rare works that the late Nabokov wrote in the language of his ancestors look, in terms of language structure and stylistics, more like a translation from English than a work in original Russian. The same concerns Brodsky, who was gradually losing his Russian. (I can give concrete examples proving that.)

The invasion of the English language into the Russian linguistic space is a real catastrophe, and it is time to take decisive measures to protect the Russian language. An appropriate law is necessary. The problem is that there is nobody to work it out and to adopt. Our ministers (including the minister of education) and members of the Parliament do not know Russian well enough; their knowledge cannot satisfy even the requirements of an elementary school. I can fancy the surrealistic picture: “Discussion of Draft Law on the Defense of the Russian Language in the Russian Duma”! (A group of draftsmen headed by Chernomyrdin and Philippov.)

By the way, the spread of the English language all over the world does not at all have favorable effects on the English language culture. It is not just the fact that American English, not British English, is spreading, a variety of English that is actually a jargon that not everybody in the puritan England can understand. What is more important is the fact that a new language variety is appearing—“foreign English”, actually, numerous “Englishes”: “Russian English”, “Chinese English”, and whatnot. These varieties are primitive in meaning and terrible in pronunciation. And this “sham English” obviously exerts a negative influence on the real English language.

What is a way out? On the one hand, in conditions of globalization a universal language, or to be more exact, a universal means of communication is vitally important for mankind. Thousands, or probably even tens of thousands of peoples and nationalities live on the Earth, and they all speak different languages. Every language has its own value; it is an irreplaceable and indispensable element of the world culture. But from the point of view of their role in cross-cultural communication, the languages have a different status. An equal status of all the languages and dialects is not just a classical example of the Babel Tower. It is impossible in principle. On the other hand, as I am deeply convinced (though I am not sure if I managed to prove the assertion with convincing arguments), the monolingual communication on the basis of the English language that is being imposed on the world today, is not a way out either, it leads nowhere, it is unacceptable. I do not know the optimal solution. I cannot even formulate the corresponding optimization

task. My aim is to single out a problem. Let us call it the “Babel Tower” problem.

As the level of globalization is going up, the ideological pressure on the world, to be more exact, on the public and personal consciousness, is growing. To be still more exact, the methods of turning a person into a zombie by exerting pressure on their consciousness are becoming more and more refined. And here the most important role is assigned to education. We can clearly observe all these phenomena in the Russian education. It is already in the elementary school that it all begins. This is very important. A child’s mind has not yet acquired the habit or developed ways of critical thinking; the instinct of imitation is a part of a child’s nature, and whatever is suggested to them or instilled into their minds is not just perceived by their consciousness, it serves as a basis for further growth. Thus if in our fight against the destruction of education we focus our attention only on the later stages of school education, we can miss something very important, and then in the high school we will have a generation of badly educated children who have lost altogether the connection with our national traditions. And the numerous church schools or asylum schools that are now appearing only make things still worse by disrupting (destroying) the unity of the Russian school. As I am not an expert in this field, I will not develop the theme, but I would like to stress once again its unusual importance.

The picture changes slightly at the following stages of school education. Practically all the subjects become ideologically loaded. In some, like for example, mathematics and a foreign language, the ideological content is expressed indirectly, while in others, like history and literature, directly. A foreign language, namely the English language (remember, we are speaking about Russia) is forced as an additional load to education, while a good command of English is becoming a *conditio sine qua non* for moving up the career ladder. And even the knowledge of the Chinese language does not help: it cannot replace the knowledge of English now (I do not know what will happen in 50 years).

Mathematics is a harmful and dangerous subject. If a person knows mathematics well and has a good command of a mathematics method, the person is difficult to manipulate. Such a person is in the habit of thinking creatively, he or she takes decisions consciously and independently, without obeying other people’s will, such a person acts consciously and independently. In conditions of globalization the excess of this kind of people is lethally dangerous for society. That is why they find it necessary to reduce the contents of school mathematics programs and to alter them in favor of such themes as algorithms, formal manipulations, and utilitarian-pragmatic applications.

Unlike foreign language and mathematics, history and literature are subjects with direct ideological effects. That is why they are revised most radically. I remember how it pleased our liberals and democrats to scoff at the history of Russia. They alleged that Russia was a country with an unpredictable past. Today our past is revised, and not only the Russian past, but the past of the entire humanity, not only the distant past, but the most recent past the witnesses of which are still alive, some of them are even far from being decrepit. The recent

past is revised for the first time, not just once again. It is revised impudently and blatantly under the ideological guidance of the new master of the world—the United States of America. By the recent past here I mean the history of World War II. It is the height of cynicism to publish in Russia a History school textbook in which the Stalingrad battle is not even mentioned, and the main battles of the Second World War take place in Africa. In The United States the young people today are convinced that in the Second World War the United States of America defeated Germany on whose side fought the Soviet Union. Literature that instills similar ideas appears in Russia, too, so far outside the school programs. It remains to expect that such school textbooks will soon be published.

As to literature, two mechanisms are at work here. The subject matter is mutilated, and destructive teaching technologies are introduced. The best writers are excluded from the program, while only the most insignificant works of the most famous writers are chosen. At the same time some unknown or insignificant authors are included into the program. On the other hand, composition writing is banished, and instead of it test technologies, which are incompatible with teaching literature, are introduced as a means of evaluating knowledge (and skills?).

8. Modernization of education in Russia and globalization

We have to admit and to confess that the system of education in Russia has considerably degraded in the past few decades and is continuing to degrade. However, the System of Education has a very good ability to regenerate and to self-develop. Naturally, if its potential has not been destroyed. But for this purpose it is necessary to give it such a chance and not to disturb it by frequent interferences. For the wound to heal, it should not be disturbed. Even with the best of intentions.

But today's education officials of the highest rank can hardly be suspected of having good intentions.

Today in Russia the Ministry of Education carries out large-scale activities aimed at modernizing the system of education.

In the opinion of many specialists these are not reforms, nor modernization, but destruction of the existing system of education, destruction of the basic thing—education potential. What is the matter? Why are the reforms going on? Why are they supported by the highest authorities? Though practically all the political forces—right, left and central—do not directly support the current modernization, they do not decisively come up against it either. Why? Why is the current modernization, of all the things, being so lavishly financed, but there is no money for other needs of the Russian Education?

The Soviet Union has developed a good system of education, and the basic aim of education was creative development, development of a creative personality (which, we admit, is a strange task for a totalitarian regime). Mathematical education was but officially considered to be the best in the world. It is the System of Education that was the foundation of all the significant victories of the Soviet Union (industrialization, the Second World War, the atomic bomb, achievements in space exploration). But it also became one of the basic causes of the disintegration

of the Soviet Union, because from a certain time the powerful creative potential of the Educational System of the Soviet Union remained unclaimed by the state, and found its expression in the destructive activity. The new authority nomenclature (actually, the old one, only dyed a different color) learned the lesson well: a good System of Education is a source of constant threat, and therefore it should be strictly limited.

This is the reason why money should not be invested in education. Besides that, it is not profitable to invest in education. The way to the final product is too long. One may never get the dividends.

And, finally, an altogether primitive consideration. The period of primary capital accumulation—as now they tenderly call a period of plunder and pillage that accompanied the Yeltsin epoch—is over. The property and the power was seized and divided. The main task now is to preserve all that for oneself and for one's ancestors. And to multiply it, as the ancestors are in the plural number. Profitable places are not so many. They are for our (you understand what I mean by “our”) children and grandchildren. If necessary, we shall be able to give them appropriate education. For example, abroad. We already understand that one does not need good education in order to steal. But in order to steal a lot one needs a good education. But do we need good and free education in Russia? Why should we create additional competition for our children and grandchildren? Otherwise, God forbid, housemaid's children will get education and will wish to govern the state, or will begin a genuine fight against corruption.

This approach is determined by the interests of the ruling class inside the country. But there also is an external, international interest.

The class theory created by Marx and developed by his followers is adopted and used as a weapon by the ruling elite. The main thesis consists in the following: class interests are above national interests. Marx's appeal to unite addressed to the proletariat is taken up and implemented by the ruling class, the class of the wealthy people today. It seems that the New International that holds its regular annual congresses in Davos is going to last longer than its predecessors.

I believe that somewhere (it is clear where approximately it is) there is a kind of Strategic center that governs all the processes taking place in the Russian education and that finances the above mentioned modernization. There are a lot of proofs of that, indirect proofs of course, because it is only Intelligence Service that can have direct proofs. I base my proofs on scientific reasoning. If we observe a lot of strange events and if there is a hypothesis explaining all these strange events, then it is highly probable that the hypothesis is true.

Paleontologists often have to reconstruct a prehistoric animal on the basis of separate fragments. And it is not their fault if they obtain a terrible monster, not a gracious antelope.

Here are some facts—fragments.

In Russia there has for some time existed the so-called National Fund for the Training of Personnel (NFTP). It is this center that regularly receives credits, far from small as compared to Russian standards, from the World Development

Bank, and the credits are directed to the System of Education. The bulk of the money is spent on the payments to overseas advisors and national reformers. The only program fully financed by the NFTP is the program of creating a network of schools for retarded children. The aim is to drive our children into these schools, which are now equipped better than other schools and are better financed. (This is another proof of the fact that a good deed might be a tool of evil.) Besides that, NFTP holds competitions of school textbooks, at which the above mentioned textbooks on History and inexpert textbooks on Mathematics win. (For the sake of creating a complete picture it is necessary to add that similar competitions were also organized by the Soros Foundation). It is an open secret that corruption flourishes under the roof of the NFTP, and that the most high-ranking officials of the Ministry of Education and of the Russian Academy of Education are involved in it. As a matter of fact, it is not concealed. All those concerned know how they can win a tender submitted by the NFTP, and do it without any serious ‘recoil’ at that (I wonder if the dictionaries have already registered the new meaning of the word?).

Another example. In the world famous scientific and educational center located in a small American town Princeton there has been created a special structure that deals with the elaboration and introduction of test technologies. (By the way, test technologies are the only genuine market product consumed by the system of education). Their major interest sphere is the developing countries, and, above all, the former republics of the Soviet Union, the CIS countries. The structure occupies a large territory and its activity is shrouded in secrecy. The main service provided to the above mentioned countries (the Baltic states, Georgia, Kazakhstan, and other states, including Byelorussia) is organizing and implementing Standard State Exam. They do it free of charge so far (the usual trick of drug dealers—the first dose is free). Russia acts independently. Also so far.

And the last example. The minister of education V. M. Filippov under whose leadership the modernization of education is taking place (though he can hardly perform the role of an ideological leader) was awarded the Order of the Honorary Legion, the highest decoration in France. Why, I wonder?

Conclusion

In conclusion I would return to what I said at the beginning. Among the liberal political parties (they are just two: “Jabloko” and URF¹) only “Jabloko” devoted certain attention to the problems of Education. Grigory Aleksejevich is a very good speaker, to be sure! When you listen to him, you want to cry, and applaud, and agree with every word he says. In my heart I am “for”, but what I know about him prevents me from supporting him.

Many people whom I know personally think that the defeat of “Jabloko” in the elections (though it is falsified) is good for Education. Why? The point is that a certain Mr. Shishlov personifies the party’s policy in the field of Education. Mr.

¹The Russian word *jabloko* is translated into English as *apple*. The leader of the party is Grigory Aleksejevich Javlinsky. URF stands for Union of the Right Forces (translator’s note).

Shishlov was at the head of the Duma Committee on Science and Education for a year and a half (from autumn 2002 till December 2003). He was a loyal ally of Philippov and other reformers of education. Philippov and Shishlov often appeared together (a sweet couple!) in numerous television shows devoted to education. The communist Melnikov, the leader of the Committee on Science and Education did not often have a chance to appear on television.

I remember another story.

During an election campaign we learned that Grigory Aleksejevich read a lecture in the United States and his fee for this piece of work was 20,000 dollars, but he did not pay a tax on the sum. But let us leave the tax aside. What surprises me is that a legislator and a candidate in the presidential elections reads a lecture in a foreign country and gets a fee that exceeds tens of times the Nobel Prize! And the laws adopted by the Duma may affect the interests of the United States. For example, the law on Education.

A trifle? That is why it is disgusting!

In conclusion I would like to tell you a joke.

Two ladies meet.

— Well, when you ... for the first time, did you do it for love or money?

— For love, of course! Is 5 rubles money?!

As to Javlinsky, he does not have much to do with it. He is even better than many others. Which makes him bad.

About *brain drain*

Several years ago I was invited to take part in a television program devoted to two subjects. First they spoke about our girls and young women leaving abroad on a large scale, and then they discussed the so called “brain drain”. The juxtaposition of these two, so different (at first sight) subjects seemed funny to me. I even made a caustic comment: well, the brain drain problem is finally discussed on a serious level and is even regarded as important as the ... drain (I could not find the right word, that is, a decent and right one).

Certainly, nothing is more stupid than taking part in television discussions. The more important the subject of discussion, the less use discussing it. The result is insignificant. In my case the whole discussion lasted 10 minutes. The writer invited to take part in the program spoke on both subjects. He said that he did not see anything bad in either type of ‘drain’. He even gave some arguments to prove his point. I was so shocked by the statement that I began to shout something inarticulate before the announcer stopped me.

Now that several years passed I decided to return to the subject that is, unfortunately, still acute. It has probably become even more acute. When we watch numerous show-discussions and show-competitions on TV, we find proof of the fact that the results of brain drain are perceptible.

Besides that, the subject is directly connected with the paper, it illustrates and develops its main ideas.

To begin with, I would like to remember the past.

Brain drain is a process that began about 40 years ago in the time of the Soviet Union. The “thaw” was over, “the Iron Curtain” had slightly risen, and through the chink that was formed a small stream of new emigrants, if not gushed, then just began to flow. The stream was heading towards Israel. Vienna was used as a staging post. Some people managed to get to the United States right from Vienna, avoiding Israel. But it is to Israel that most people got, and then they either stayed there, or moved to some other country later.

As a matter of fact, it would be wrong to call the process “brain drain” at the beginning. The capacity of the channel was insignificantly small. It was necessary to get an invitation from the “other” side and to prove that you are a certain generation “Jew”, or that your close relative is a Jew. Some even married a Jew in order to have a chance to leave. Besides that, the authorities did not give permission to leave right and left. A standard reason for refusal was access to secret work. A real community of so called “the refused” appeared.

Besides that, the professional level of the majority of those departing was not high enough to regret that they were leaving. Many of them were mere failures professionally and tried to attach more weight to their personality by taking part in moderate political actions and in the dissident movement. This first after the thaw wave of emigration can be defined as Jewish-dissident.

The authorities sometimes used the channel that was thus formed in order to get rid of some notorious personalities. Thus, for example, the leadership of the country could not solve the problem of the famous philosopher Alexander Zinoviev for quite a while. At one time he was offered to emigrate to Israel. He was invited to the district committee of the communist party, where he even had to prove that he was not a Jew. They believed him and found another way to get rid of him.

And there is one more important circumstance. At first all those leaving the country had to cover the expenses of their education. I do not know if the sum of money depended on the kind of educational establishment or on the length of service in the chosen job, so I cannot say anything about it. But the fact remains.

World public regarded the requirement as a violation of human rights, and under the pressure of the world public it was cancelled. I cannot say when exactly it happened.

Thus the process that we call *brain drain* today has lasted for about four decades now, and is about a generation old. “Brains” is just a part of an overall emigration flow from Russia. With the arrival of the “democracy” era the size of this part has grown considerably. Young, talented, educated people are leaving the country. Why?

What does a scientist need? As a matter of fact, they need very little—just being able to do what they like doing, to devote themselves to scientific research. But it is exactly this opportunity that scientists in today’s Russia do not have. Scientific research is out of the question if life is but a struggle for survival. Just like in prehistoric times.

Frankly speaking, I do not have a very clear and complete picture of the present

day situation in the world of science in general, but I am more or less familiar with the situation in the mathematical science, including mathematical education.

The specificity and advantage of mathematics consists in the fact that studying or teaching mathematics does not require expensive and specially designed equipment. This is probably one of the reasons why Russia still maintains a very high level of both mathematical education and mathematical science (naturally, in addition to the tradition and the people). And the high level is in its turn the reason for the continuing “drain”—emigration of scientists and specialists who have got mathematics education in Russia. This also proves that despite the obvious fall of the level of mathematics education in this country, its topmost, elite part still remains one of the best in the world, and in this case it is real, not potential education.

I dare not estimate the number of mathematicians and scientists of closely related branches that have so far left Russia. At every international conference on mathematics or mathematics education you can meet “former citizens”, and the number of “the former” usually exceeds greatly the number of delegates from Russia.

In the past few decades (ten–fifteen years) the brain drain process has somewhat changed. Firstly, the age of those leaving the country has become younger. Representatives of the older and middle-aged generation who wished to leave left long ago. Now it is the graduates of the leading higher educational establishments that are leaving, those who have not worked a single day after the graduation. High school graduates, the best pupils, winners of various mathematical competitions, have recently begun to leave the country. I am sure that not less than a half of all the winners of mathematics competitions at the highest level (international, all-Russia competitions) in the past 15–20 years have left Russia.

In conditions of Globalization highly developed countries prefer to have some industrial enterprises (plants, factories) located in backward countries, where work force is cheap. Likewise they prefer to prepare highly qualified specialists (in certain fields) in countries where the standard of life is not high, but the System of Education is very good. This is much cheaper than to educate specialists at home. In Moscow there are educational establishments whose graduates, almost one and all, leave for the United States. These educational establishments are heavily orientated towards mathematics and physics. (They say that one generation of the best in Moscow physics and mathematics school, School No 57, all the graduates without exception, though not at once, moved overseas.)

Secondly, widely spread is the so called “semi-emigration”. There are several varieties of this phenomenon. On the one hand, there are scientists working mainly in Russia and traveling abroad from time to time, not only to developed countries, in order to fill up the family budget. On the other hand, there are scientists living mainly abroad, in the West, with their families. They work and teach there but they come back to the Motherland from time to time in order to have a rest and to remind us about their existence. Scientists of the latter group usually occupy very high leading posts in Russia, and they are not going to lose the posts, not on any account.

The continuing brain drain illustrates well many points of the paper.

Good education is an expensive market product. However, it is not so much education that is market product, but educated people, people who got education (in the momentary, genuinely market sense). In order to get profit they do not sell car plants, but the products of car plants.

And if we continue the car analogy, we will get an altogether absurd picture. Suppose there is a car plant in some country. It was built with the taxpayers' money. All the models produced by the plant were designed by the local engineers and all the cars were made from available materials. All the cars are of very high quality. The cars produced by the plant are rather expensive in the home market (it does not matter so far who pays for them), while in the foreign market they are given—free of charge. It is an absurdity!

But this is exactly what is happening in Russian education.

Some people may object by saying that the comparison is impossible. You cannot compare a car and a human being with all their rights and freedoms.

Again we have a case of double standards, and they are double in several respects.

Take, for example, footballers and other sportsmen. Naturally, the money they get is incomparable with a scientist' salary. But this is not important here. What matters is that a first-class footballer or a footballer of a lower class is the property of the football club owner. Every footballer has his clearly defined market value, in accordance with which he is sold and bought.

I do not at all want scientists to find themselves in a similar position. But still, is it easier and cheaper to prepare a good scientist than a good footballer?

Another fact. In the United States they treat their own graduates with much more consideration and economy. If you got education at the expense of the state or the federal government, then you have, first of all, to work for a definite period of time to compensate the expenses on your education, or you may pay the money back before you go anywhere.

Naturally, education should be free for the citizens of the country, to be more exact, the expenses of education should be covered by the state. And the state should demand that all those leaving abroad should pay their education expenses back to the state. Of course, if the person has not compensated the expenses before the departure.

Our westerners and democrats like to refer to foreign experience and compare the state of affairs in the world and in our country. I will do the same.

Today in Russia the salary of a scientist or of a teacher is the lowest in the world, both in its absolute and relative value. (The situation might be still worse somewhere in the post-Soviet space, but then it is a place where there is neither science, nor education.) This cannot be attributed to economic interests, or to the operation of market mechanisms. Consequently, it is the policy.

For the sake of comparison let us take China. It is a poor country. Probably in terms of per capita income China is poorer than Russia. But in China poverty line is determined by education. The income of a person with higher education

corresponds to that of a middle class, and according to international standards at that. The salary of a professor in China guarantees a fairly high living standard. While in Russia an unskilled manual worker in the greengrocer's earns more money than a professor.

Russian scientists are pushed abroad by the great discrepancy between the material, social, and moral position of a scientist here, in Russia, and there. I believe that the discrepancy is artificially created and maintained (and this proves my theory). Such state of affairs answers the class interests of the World International of the Wealthy. To make things still worse, a serious stratification of the scientific community in Russia has begun. And this is also very dangerous.

I cannot give precise numbers, but I think that intellectual losses of Russia can be compared with the casualties in the real hot war. These losses can also be expressed in money equivalent. They amount to hundreds of billion dollars. It is also necessary to keep in mind that in addition to direct losses there is collateral damage of different kinds. For one thing, there are pupils who could have got a better education, and the pupils of the pupils. We should not forget that our losses turn out to be gains for the USA and their partners, which increases the otherwise enormous difference of potentials.

And there is one more, last but not least, circumstance. Those who leave are young people in the prime of life, or just at the beginning of their career. They are healthy, intellectually well-developed and physically fit. A genetic plunder of the nation is taking place. Thus, the authors of the above-mentioned television program were not at all wrong when they united such different subjects.