Young Leaders as the Critical Factor in Framing Sustainable Development (Russian Siberia as the Case)

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Abstract. The following questions are considered: uncertainty and how the young generation can cope with it, what ought to be done to correct mistakes of the past and overcome the social crisis while finding the Russia's "third way" in the world; the most acute problems and the primary tasks in Siberian development according to the young researcher's perspective.
The paper advances the idea to construct the society where access to the generated material and moral values is determined not only on the basis of work but also on other kinds of activity such as educational; the revision of assessment criteria of paid and unpaid work is suggested.

Greatness is not in where we stand, but in what direction we are moving.
We must sail sometimes with the wind and sometimes against it –
but sail we must, and not drift, nor lie at anchor.
(Oliver Wendell Holmes) [1]

Introduction

The current period in Russian history can be characterized as the time of "uncertainty" and "challenge". The country is shaking on its legs because of the "permanent" socio-economic crisis it is undergoing. It is a general belief that it started at first as the re-engineering, which was called in Russia "perestroika", but later turned into the crucial, even devastating reforms, that demolished the total social and economic system.

How we can respond to challenge and uncertainty? The history does not bear uncertainty; every society cannot abide in uncertainty for a long time. Also, it is impossible to adapt to challenge, we can only react to it. The challenge could be responded through: adaptation to seemingly valid values; referring to traditional spiritual (cultural, conventional) values; creating new values according to the challenges and adequate to them. Who can do it? Presumably, people with new ideas, new vision and desire for change. Such virtues are characteristic of leaders and people looking for the new life routs; and new routs are usually searched after by young people.

Our young generation can hardly remember life before 90-es, but the current atmosphere of crisis has influenced its life and conscience considerably, and not only in the negative way. For the last decade the attitude of the whole society toward young people has visibly changed, they are more often viewed as actors of social reformations instead of a group arousing public concern and breaking the accepted rules.

The instability and uncertainty of life in Russia can, to a great extent, be attributed to unsatisfactory decisions made by the leaders in various sectors of life. Regrettably, the leadership

as a phenomenon seems to be irrelevant to new challenges coming simultaneously from the external world and from different forces within the country. Some experts have been raising up the question about the (in)ability of actual leaders to overcome the crisis in the country [2, 3]. Observing the main problems of the decade of reforms, the director of pan-Russian Center for Public Opinion Research, Youri Levada named the crucial causes of failures at reforming as follows: 1) the low quality of the Russian new elite, which could have claimed for the role of transition vanguard (its inability to govern in modern and professional way); 2) the shortage of factors capable to mobilize masses for important social change (the raise of democratic sentiments in August 1991 involved rather narrow, mostly intellectual, circles and had not been realized organizationally; 3) reformers' inclination for leadership was insufficient – "the power was and looked feeble, that can be referred to the first figures in the regime", and the mostly influential opponents tried (equally unsuccessful) to step forth as initiators of change and "strong" leaders. [2, p. 7-12]. The historical role of "strong" leaders in Russia have been vital, but "strong" meant not necessarily constructive and great, but often dictatorial and violent, particularly in periods of transformations and uncertainty.

We live in the time of rush and sudden changes, and we suffer the impact of "social acceleration" at different levels, personal and social (Suprun) [see 3]. The external forces break attempts of reformation in the country. Problems get more complex, i.e. it gets even more difficult for public movements and non-governmental organizations to push forward their decisions in changing environment. The rapid changes, figuratively speaking, collide with each other with constantly growing force. "New leaders are needed for the new century – leaders who can work in teams, who can manage change, who can function in a global world and who embrace diversity. Never has enlightened leadership been so crucial to our success as a democratic society" [4, p.57].

The role of young in creating the future: prerequisites for development

Not only activism of young people, real deeds of youth associations in the fields of human rights and peacemaking, but also the visible change in the social quality of the young generation urges us to rethink their role in the ageing society. In our seek for "enlightened leadership" the role of young leaders seem to be of utmost importance for the future and is promising in terms of their contribution to sustainable development of different social groups, organizations and society at a large.

In this connection the young people have some advantages over the older generation – not only in age but also in social vision. Their great innovational resource is especially serviceable in the era of globalization when structures, functions and ties are changing [see 5].

Young people's greater opportunities of active participation in social transformations require from them a full apprehension of the tasks set before them and of the need for search of new effective ways for their achievement.

As young people relate their achievements to the future, they take a vital interest in introducing changes into the present reality and experiencing its effects. The future is considered first of all as the process of its construction, and then as the result of our efforts. In other words: the way is the goal. On this way to a better future, special emphasis should be laid on social factors, such as human potential and sustainable human development.

It is interesting to look at these changes through the lens of human development concept of the United Nations Development Program, which is an instrument for analysis of the level of human development attained in national states and regions. By the data published in the last Human Development Report for the year 2002, Russia occupies the 60th place by this parameter. The Human Development Index has decreased not only against 1985 (0.826), but remains low now, making 0.778 in 1995 and 0.781 in 2000 [6, p.146]. Special attention in the report was paid to the role of new technologies as expanding human capabilities and to the increased choice of alternatives accessible to people in their everyday life.

It is emphasized that market mechanisms are not enough to utilize new technologies for satisfying real human needs. Required is special commitment to this purpose and state investments [6, p.44]. The report puts forward the concept that "in the era of computer networks, strategies of development must undergo revision. Policy developers are invited, as a first step, to view the present technological achievements in a different way [6, p.46]. It suggests a special compound index that does not show what country is leading in world technological development, but does show how effectively the country participates in creation and use of new technologies.

In the estimation of "index of technological achievements" included are such components as:

1) *creation of technologies* (per capita issued patents and fees paid from other countries);
2) *spread of new inventions*, in particular Internet, as well as percentage of high and mid technologies in the volume of export;
3) *spread of already available inventions*, spread of telephones and per capita consumption of electric power;
4) *skills in the population* calculated, on the one hand, by number of school years, and, on the other, by percentage of higher learning students in natural, mathematical and applied sciences [6, p.46].

Unfortunately, for Russia this index is not estimated, and in the World Human Development Report 2001 she is not considered to be a leader or a potential leader of technological progress, although by the number of issued patents Russia surpasses some of advanced nations (Canada, Israel, Belgium, Australia, United Kingdom) [5, p. 48-51]. Therefore, the question about the role of science in social progress can be defined as one of the most significant at this time.

The view of development from the position of younger generation is also very significant. In Human Development Report Russia 2001 [7] emphasis is laid on young generation. Analysis of their values and priorities, social and economic situation as well as quality of education and health allow one to better foresee the future tendencies of development. Of a strategic importance are the questions about mutual responsibility across the generations, balance of roles, leadership and power, the responsibility of young people for the development in new directions, for example, in high technology productions.

Globalization processes have affected the generations in a different way. Social time is perceived as "divided into short pieces ("projects") requiring of a person, primarily of a young person, maximum mobilization of available resources and then a quick movement to a new project… Middle and older generations will be compelled to accept the new perception of time [6, p.22]. The new reality of globalization makes plans for the distant future impossible. The present younger generation differs appreciably from the older generation; it adapts itself to any social changes.

Challenges to youth: how to cope with crisis and uncertainty

Post soviet reality challenged the social conditions and thus influenced the social background of a young generation in Russia. We not only have to live in an environment of social and economic unsteadiness, but also have to face a crushed system of values. Young people are the first generation grown up during a huge cultural invasion from the West, and we feel communist ideals alien to us. We were socialized under the influence of highly varied ideas and behavioral patterns, in the atmosphere of mixed cultures and shifts in moral accents.

The experience of living under uncertainty multiplied by our human potential might be very helpful in leading the country out of crisis and creating the better future for Russia. Compared to preceding generations, our immanent qualities are flexibility and adaptability, which we can continuously elaborate through studying, communication, and leisure. We act faster and also more effectively than the older generations did some 20 years ago. The young generation has to develop their ability to draw on the knowledge and experience of many

generations in overcoming social crisis and building a better future. This situation is certainly very challenging, but we should perceive the experiences we have so far made as a privilege.

We saw the collapse of soviet regime, which was an attempt to realize a utopia. The goals of development and universal happiness persist, but ways for their attainment are changing along with social changes. While we do not condemn the utopian ideas, we are certainly more aware of the fact that humanitarian goals can sometimes turn into the exact opposite, if we try to attain them by inhuman means. However, we are not going to idealize capitalism that has come to us from outside.

Young people are more apt to embrace novelties in the sphere of information. Being free from ideological shackles, we can operate different theories, see things from different perspectives and work out a way “somewhere in the middle”.

But as Russia has to recover from its economic crisis and has to pay off external debts, this won’t be easy. Although Russian leaders work hard to lead the country out of the crisis, no acceptable ways have been found so far. I think the characteristics of young generation mentioned above are very important and must be utilized in the period of Russian transition.

In the period of crisis Russia is searching for its own way of development. The present displays of capitalism, on its "wild" stage of primary capital accumulation show that the "third way" is more pertinent for Russia. The Program of the Communist party turned out to be a dream that is just not practicable in reality. The totalitarian regime that prevailed in the period of socialist pursuit led Russia to some isolation in the World. In view of globalization, however, it becomes obvious that the country, like all others, will not be able to stay away from ever-increasing interconnections between the world's countries. Now, when Russia gets open, it is the time for choosing the path, which will define the country's place on the world's arena - this mission is relevant to young generation. But there is a danger that while elaborating the developmental strategy for Russia the youth will idealize capitalism just because it is the opposite of communism. When we strategize and promote concepts for the economic organization of our society we should always bear in mind the existing Russian problems. Some of them, which bother me most of all (and which I address in the proposed concept for the better future), are:

1) low level of income in the spheres requiring a high level of education and proficiency (education, science, and medical services);
2) polarization of living standards and opportunities between urban and rural places;
3) gender inequality in paid and unpaid work.

“People of the Future” in Russia

The enlightened leadership of youth is seen possible through cooperating with elder generations and utilizing human potential of the young. “New leaders” have to find common ideas inspiring and acceptable for diverse groups and make decisions favorable for everyone.

The vision of a better, happy future of Russian society surely incarnates democratic values and inspires young people to action. But Russia’s history and also the current situation show us the real story: Disillusion, the ruin of faith in presumably happy future (communism) is dangerous. Even when people get endowed with freedom and opportunities of choice, they often feel like being cheated by the government, lost in the new economic environment, and not required by society. The need to make a choice and to bear responsibility is felt by many as a burden. In such a critical situation they resist the idea of reformation, continue to live with memory of the past, become the “people of the past” (Toffler). They would not lead the society out of crisis. For doing it "people of the future" is required, who "are already caught up in a new, stepped-up pace of life" [8, p.38] and their dreams directed to the future. In Russia there is a need to help people to live actively in the atmosphere of choice (because many of them are still no used to take all the decisions on their own and to being fully responsible for what they do); bring up new leaders capable for decision making in conditions of crisis and transformations.

The present younger generation differs appreciably from the older generation; it adapts itself to any social changes. The result of just this quality is that lately the male population of the country aged 25-34 have had the highest per capita income, whereas in the Soviet period the highest material well-being was attained, as a rule, at 50-60 years of age [7, p.4].

To certain degree the older generation became weaker than the young generation at the turn of centuries – that differs Russia from the Western European countries, for instance. Young leaders will have to solve some serious problems, which the country faces. Due to economic and political reforms, the older generation has lost a lot (not only material values, such as their life savings, but also status, respect and faith) since 1991. As a result, they feel unconfident in the "open society". Young people have to become leaders of a new formation and help older people to raise their living standard deteriorated drastically in the last decade. This is vital, because nostalgic glorification of the past would be one of the main obstacles in building a better future. To ensure smooth transition younger generation have to recognize that mission and responsibility.

Although, marked are some dangerous tendencies like “aversion from fundamental knowledge”, enthrallment of the young with mass media and publicity, erosion of moral values such as fairness, accountability to the society, equality, giving a helping hand to others etc. [7, p.21]. According to the 2000 VCIOM* data, for example, over a third (37%) of the young do not

feel personal responsibility for what is going on in the country, for solution of problems faced by Russia, and only 7% feel some responsibility. Still lower proportion of the young are concerned with world problems. However, the young understand that for securing the national interests it is necessary to maintain the high level of economic growth and defense of Russia. This was confirmed by the findings of our survey, too.

Building up happy future: the concept of work distribution favorable for everyone

Having in mind the purpose of overall justice and happy future, let's assume that society withdraws from the practice to pay only for what is traditionally considered as "work". Such a society may not only recognize the work performed by those who participate in production, services and the transmission of knowledge as socially important (and, therefore, remunerable) but also by those engaged in education, including self-education as well as those being committed to domestic self-services or taking care of children and old people.

The available resources are allocated according to the efficiency of both paid and unpaid work as well as to the attained level and quality of education. Here of course a question about appropriate indicators measuring efficiency of work and education arises. But this problem is solvable in principle, for example if we employ the time expenditures on these types of activity. The efficiency of work is measured by the quantity of produced goods or services per hour. The efficiency of education is determined by its level and usage in work. The level of education is measured through testing of knowledge. Thus, it is always possible to estimate the level of one's education and proficiency in different spheres. Getting a certain level of education requires spending a certain (average) amount of time. The achieved level of education would be encouraged by a certain level of non-working income. People who show talents and outstanding abilities in increasing their educational level should be demanded in greater extent and rewarded by society (for more detail, see [9]).

Implication of this concept will lead to a better future not only because beneficial work for society and education gets rewarded adequately, but also because such an approach permits to eliminate possible frictions in our societies and to build up grounds for the integration of different generations and social groups. Example includes gender income inequality when most part of paid work is performed by men, and most part of unpaid work - by women (like it traditionally turned out to be in Russia). All groups of the population will be motivated to improve the quality of their education. Note the very important thing: a higher level of education of one person is not in conflict with the interests of others. Of course we must not ignore people with intellectual disabilities and have to prevent their exclusion. This could be done, as I see it, by helping them master important manual skills, develop their plain intellectual skills and

employing them in unsophisticated socially necessary work. For this special programs have to be developed.

This concept goes further: I think that even children must be rewarded by society according to their participation in unpaid work and to their achievements in the sphere of education (in place of children's allowances). After retirement old people can actively transmit their knowledge and skills (both occupational and amateur) to the young generation for which they will be rewarded additionally. Thus grounds for interaction and mutual understanding between generations will appear, promising in the long run a cutback of stresses, loneliness, drug addiction and crimes.

To further help children to achieve a higher level of education and self-development we need new inventions which make the care of children easier, make the children more self-supporting, help their development and distract them from television and computer games. I see the danger that children observe fictitious, horrific things instead of participating in real life - this will influence their mental development badly. They get the "speed of life" through participation in virtual brutal activities, but not from outdoor games and sports. Besides, sitting in front of a TV or computer monitor for a long time is harmful for a child's health. In the future, I think, we need to involve children in participatory activities such as taking care of animals, planting trees, growing flowers.

Young Scientists as Leaders in Siberia

Siberia is of utmost importance for Russia: the region is famous not only for the Trans-Siberian Railroad and natural recourses, but also for Siberian Branch of the Russian Academy of Science (SB RAS), a part of which is the world-famous Novosibirsk Research Center (NRC), remarkable for high concentration of scientific potential. In 2002 the Russian Government has accepted the Long-term Developmental Strategy of Siberia. The accent is made on economic development of the region. At the same time there is a need to identify methods for stimulating the leadership potential of the young and develop an effective social policy in the region.

The mission of the Novosibirsk Research Center is to perform complex fundamental studies in key lines of science, to select talented youth in the vast Siberian region and introduce scientific achievements into the national, largely Siberian, economy. Lastly, however, there has been a steady tendency to lower number of the young researchers in science, lower incentive to innovate, parochialism in science and low application of the developments to the real life.

Among the vital tasks of the Council of Young Scientists of NRC is to mobilize young researchers to more active participation in the process of human development, make them better understand their responsibility for this task and seek effective methods for its achievement;

facilitate the exchange of views for further cooperation among them and create a reserve of young leaders.

The empirical study held by the Council of Young Scientists (2002-2003) showed how the young researchers of the Siberian Branch of the Russian Academy of Science imagine their social role and opportunities for the future**.

Expansion of Opportunities and Responsibilities

In the transition period, the choice of pursuits - what to do and what goal to set - has substantially expanded for the younger generation. Opening of borders accompanied by a mighty flow of information from the outside world coincided with establishment of market relations not only in the economy but also in other spheres. In comparison with "modern" professions (banking, finance, information technologies, tourism, trade) the prestige of science and of civil service fell deeply. The result was quickly increasing average age of NRC research workers and decline of the proportion of the young.

Most young people wish now to make their professional career not in the public-financed sector, but in commercial firms, in foreign companies dealing with wholesale trade, finance, consulting, and audit. The career in science is often associated with low income, poor social security, or, more generally, with "failure", as distinct, for example, from the job in a large foreign company.

Of course, foreign companies help Russia to integrate in the world economy and business ethics, create jobs for the young. At the same time, high prestige of foreign companies sways the young away from developing the Russian economy toward supporting the economies of other countries, because the profits of companies go away from Russia. This situation cannot be taken as favorable for Russia, especially if we think about the country's future five decades ahead, let alone the fact that the work of young people in foreign companies is often burdened by high load, stresses, and impossibility to use creativity.

Young people who take up the field of science set much store by independence, own opinion, freedom and opportunity of self-realization. Unfortunately, the creativity of young researchers is involuntarily oriented to the solution of problems that are far from science – accommodation to the existing work environment and supporting a decent income, which diminishes their contribution to science.

"Curiosity and the desire to explore can be enhanced. Useful curiosity requires individuals who have mastered the existing body of knowledge but are not paralyzed by it... Societies that value and honor curiosity produce curious people" [10, p.105]

Our respondents were young specialists from different institutes of the NRC, most of them do not think they are leaders (revolutionaries) in the sphere of science. 88% do their studies and developments within the well-established scientific schools and the approaches of well-known scientists, of whom 29% relate themselves to a particular scientific school, and 59% work within a certain concept. These figures speak not only about continuity in science, high authority of scientific schools and their influence on the future of the Russian science, but also point to the fact that young researchers are employed as followers of earlier inquiry lines and not as pioneers and innovators.

Note that among those who work within the established scientific schools there were more women (67%) than men (54%). Quite a different picture is in regard to those who relate themselves to a particular scientific school – men outweigh women: 31% to 24%, respectively. There are, however, some lone persons among young specialists who are developing new concepts and using innovative approaches to particular scientific issues. In this group (7%) men prevail.

Under the present conditions, young specialists are practically devoid of a possibility to work over a new concept because it is fraught with a certain risk of losing guaranteed remuneration in the absence of own savings. This observation is confirmed by figures given below about key problems in the development of research. It is not accidental that young scientists name low salary and under funding of research as the key problem. The words of a young researcher that the scientist's work has something maniacal reek of despair. This phrase is worthwhile to think over…

We examined the participation of young researchers in individual and group projects as heads or executors and identified four groups. The most numerous group (45%) are employed in group projects as executors, which is normal. Half that number (22%) work over individual projects separately from other staff members, which speak of their ability to take independent position in task solution. However, as a "shadow" leader there can be a senior mentor. The second-largest group (29%) work within both group and individual projects, combining different forms of cooperation to earn their living. Young leaders is the smallest group (only three persons among our respondents), they head group projects.

Gender-related differences were discovered in a group working mainly over individual projects outside the staff, here men prevail. This speaks not only that men as heads of projects appreciate thoughtfulness, punctuality and responsibility of their women colleagues and their high contribution to the work of the group, but also that now as earlier too it is men who are the first to be promoted to leading roles.

One may think that young women researchers are more apt to work "under umbrella" of their colleagues and draw on authorities. However, our study showed that young women are more concerned with the success of their team and science in general, that their approach to problem-solving deserves recognition and evidences their scientific maturity and potential for leadership.

For young men it is important to belong to a well-known school but not less important for them is freedom of action, they more often identify themselves with an influential group but are more willing to work in isolation and take the role of a leader in group projects.

To the question on the authority of scientific advisor, the majority (89%) agrees that the views and opinion of the head have influence on the scientific activity of a young specialist. No one opposed this view. 7%, however, do not feel the influence of the scientific advisor and use only their own judgment. Only two respondents in our sample worked in isolation because of the absence of such an advisor.

Scientific Development and Problems Faced by Young Researchers

The young faculty of the Novosibirsk Research Center named the most acute problems impeding scientific development and the first mentioned were, first, the daily wants: impossibility to buy housing and low salary (94%); second, declining prestige of science in Russia, lack of strategy for its further development; third, poor organization and equipment of working places and lack of funds for study tours to large scientific centers. The third group was 78% of the respondents. It is of interest that under funding was largely the problem of young researchers in chemistry and mathematics as well information technologies.

I dare to cite here some statements made by our respondents, which vividly characterize the viewpoint of the young researchers:***

"Absence of own accommodation and, which is all important, absence of a possibility to earn money in Russia for purchase of housing – one has to put efforts and time to earn funds "on side" or abroad. I think that possible solution can be long-term credits for housing, ideally for ten to fifteen years and minimum for five years"

"By legal way it is impossible to earn enough money to purchase housing. If you have no dwelling, then it is better to knock about in the USA – it's warmer there. The loan that is now possible to have (and that not to all) (250 thousand rubles for three years) is regular fraud. It makes sense only for academicians to have something to report about".

"Absence of clear prospects in life (primarily in regard to income) and in scientific career – if a scientist loses his job, he may find himself not only outside profession but also outside life as such. This is why the scientist's work is a bit maniacal, so the society must be cautious".

Table 1

Replies to the item "**Name your most acute problems inhibiting the progress in science**" (% to answers)

	men	women	Average
Living conditions			
Low pay	43.3	42.1	42.9
Absence of own housing or a possibility to purchase it	53.3	47.4	51.0
Status of Science in the Society			
Declining status of science and search for a job abroad	23.3	10.5	18.4
Barriers to manufacturing application	3.3	0.0	2.0
Absence of strategy . orientation to quick result	10.0	5.3	8.2
Work management and conditions			
Underfunding	26.7	31.6	28.6
Poor equipment	13.3	21.1	16.3
Side earnings	3.3	15.8	8.2
Absence of a comprehensive program of international exchange	10.0	15.8	12.2
Impediments in career path	6.7	0.0	4.1
Few group projects with participation of different generations	3.3	5.3	4.1
Other	6.7	0.0	4.1

We studied how the young researchers of the Novosibirsk Research Center imagine their social role and opportunities for achievement of their scientific interests and decent income.

The bulk of the respondents think that the opinion of the Russian young people is not considered in decision-making process at state and regional levels (63% and 61%, respectively). The opinion of the young is not taken into account in enterprises and institutions – 37% of respondents. It is true that 51% think that partially it is taken into account. However, an appreciable part of the young researchers think that young specialists must come into all above-mentioned bodies (67%) to speak for themselves. Note that some also indicated that as the young have not enough experience their participation in power bodies is not desirable (12%).

In the future, during the new stage of social development, the main part of the employed will be concentrated in branches connected with the dissemination and processing of information and in the sphere of services, this tendency is rather distinct now in Russia. It is of utmost importance to build productive intergenerational relationships as increasing misunderstanding and even social tension occurs between different social groups: those who can benefit from the advantages of the transitional ("informational", "post industrial", "knowledge-based") society and those who are excluded from them. As Lester Thurow pointed out: "What makes an era ahead different is the extent to which it will be dominated by recently acquired knowledge and

skills…Older workers sell experience and skills of an earlier vintage. Young workers sell newly acquired skills. Experience is just less valuable… the new are worth more, the old are worth less" [10, p 133]. I suppose that this problem will become one of the critical ones in the 21st century, so that we have to keep it in mind. Studying different possible unpaid work and employment in a more informal economy might be a perspective for creating a concept of a new working society.

Now, can the young find better solutions than their elder colleagues? The opinions divided about equally, and a slightly higher number of people (47%) think that they could have coped with problems in a better way. A smaller part of the respondents (44%) were uncertain in assessing the potential of the young in this respect. This points out that one of two young researchers has never thought whether he is able to change the situation to the better, not seeing for him/herself a chance to take part in making decisions! We can assume that the wish for presence of young specialists in responsible bodies is of an uncertain character, a "let them take part" kind, without any shaped idea behind these words.

Our survey has performed another important task – the young researchers were given these questions. We think it extremely important to discuss transformational, leadership potential of the young in our time that is rather difficult for the Russian and Siberian science. It is so not only among the young themselves but among our leaders as well. Even in doubt the young researchers see their leadership mission: I doubt that they would find better decisions but they could at least lobby the interests of the young and arouse response in public opinion as minimum".

Then, what problems they think dependent on the young to the most? They include primarily: development of science, science-intensive productions and new technologies (68%), demography (increased birth rate) (59%), transition to healthy way of life, rejection of alcohol and drugs (59%). Women also marked the role of the young in raising the children and in extermination of gender, ethnic and residence inequality.

On the spheres of activity where the young are leading, no common opinion exists. The majority admits that they have no answer. They make about half of the surveyed (48%). If we still try to pull out some answers, it is possible to identify no more than two or three groups: 19% think that it is science and high tech sector, 15% that there are no such spheres. Nearly the same number think that such spheres are commerce and finance (8% and 6%, respectively). As is seen, the majority could not answer this question, which shows that no bright instances are in the memory of the young researchers from the NRC.

Most young workers do not doubt that a young researcher must be a high achiever and seek to come to the top: 88% gave the affirmative "yes". It is of interest that this opinion was

supported by nearly all men (97%) and only by two thirds of women (69%). Does it show lower leadership ambitions in women? The strong effect of gender stereotypes? The answer is rather yes, since for many young women the value of family is the highest but have no possibility to combine successfully leadership in science and family duties.

The question if the young generation should strongly differ from elder generations and if yes then what it is the difference, the following differences were reported: the young are better educated in flows of information (66%), better react to arising problems (54%) and are more "flexible" in understanding what is going on (48%). The ability of the young to undertake examination of hard and acute problems was mentioned less often (38%), to have a broader vision, take into consideration global changes (36%).

In the answers about advantages the young generation has in science comparing to elder generations we find all vital components of leadership but unfortunately the young do not take them as their leadership potential. Among the privileges of the young generation in science it was noted that: the young are better educated in the flows of information (78%), are free from the "burden of the past" and from ideology (54%), more easily borrow foreign experience and attainments (54%), have a quicker response to arising problems (50%). These are mighty factors for the development of science. The young folk were bashful and respectful of their elder colleagues, and this did not let them state that they have better education, better understand the problems of the modern society, feel a higher responsibility for the future of their country, and work more intensely.

How young in scientists imagine their leadership role and sustainable development

Most of young specialists participating in the poll (52%) identify as the leader a person who is a source of ideas. Many (41%) defined the leader as the "commander" and "inspirer". The definition of the leader as "explorer of the future", discoverer is shared by 15%, as innovator and pioneer by 22% (in both cases mostly representatives of sciences and technology).

These figures speak that the young researchers see in a leader the source of ideas, triggering the process of scientific knowledge and steering this process in the proper line.

Another revealing question was: **Is one to devote one's life to serve the public, the science?** This opinion was shared by less than half (42%), not shared by about a third (29%), the rest of the respondents were uncertain.

Note fairly many replies there are many variants that life is diverse and one must not concentrate only on one of its faces to the detriment of its other nuances and of the life itself:

"Is it possible to separate an individual from the public?"

"This may contradict the stereotypes of masculine and feminine roles in the family"

"Is it good devoting one's life to serve the public or science? It is good to devote one's life to realization of one's interests (they may match with public good)"

"One's life is unique, and it is profanation to devote it to a single object. It is good to have a loving family, be successful in science and distinguished in society. To achieve this is much more difficult than simply "be absorbed in science".

Is it right for a young person to oppose the prevailing wishes, interests and opinions if he feels that he is right? It is a matter of philosophy and close to rhetoric. The obvious majority of young researchers (77%) answered in the affirmative, 19% were uncertain, and only 5% of the respondents gave negative answers. Notwithstanding possibly occasional character of these answers, they do reflect some of their principles. Part of the respondents noted this question as very ticklish depending on concrete situation and concomitant circumstances.

Shall a young researcher seek to be "the first"?

Here are three statements shared by the majority:

"Yes. because he must upgrade his skills and achieve more than his colleagues; No. first he must learn; Don't know. It depends on the personality"

"He has no obligations whatsoever"

"This question is highly specific. The number of leaders in population is not large. They are not required in great numbers. Needed are pedants. workhorses doing their business unhurriedly and thoroughly".

Summarizing, the young think that motives for further career ascent are, in some way or other, to be present in one's behavior ("a soldier who has no dream to be Chief is a bad soldier"), but these motives must be innate, not imposed from outside.

In order to get the **picture of life success,** the respondents were given a multi-choice of five components of success. Most popular were happy marriage (59%), well-being (49%), employment (43%), clear conscience (41%) and good health (41%). The average young researcher, therefore, seeks to be a respectable citizen: honest and committed worker, family man, with healthy way of life and conveying his values to his children. Note that such "young" pursuits as success in career and sex received 29% and 27% of votes, respectively.

It is interesting to see how the idea of life success influences the young researchers' vision of paths of development and their attitude toward current problems. The value of marriage and family entirely correlates with report of such problems as low pay, poor equipment, absence of study tours, need of side earnings and lack of strategy for science. Young researchers oriented to marriage and family make the core of the respondents who exhibit their sense of responsibility for the future of science and society.

It was also important to discover the opinions about what problems of priority have to be solved for the successful development of Siberia in next five to ten years (Table 2) and in what tasks the young should play the leading role.

The most important paths of development for Siberia, on which the efforts should be concentrated in the first place are:

1) development of science and science-intensive productions;
2) solution of housing problem: to make housing affordable for young families;
3) higher culture and education for the population;
4) creation of highly effective jobs;
5) substantially increased pays in the public sector.

Table 2

Replies to the item: "**Since the national budget is limited, please, choose five most important in your view paths of development for Siberia first to concentrate on**" (% to answers)

	men	women	Average
Raise culture and education	54.5	33.3	47.1
Take measures to increase birth rate	18.2	27.8	21.6
Develop health services	30.3	38.9	33.3
Assume health-promoting way of living	15.2	5.6	11.8
Reduce income disparities	24.2	11.1	19.6
Raise salary in public sector of economy	33.3	61.1	43.1
Make housing affordable for young families	63.6	72.2	66.7
Improve labor productivity	30.3	16.7	25.5
Strengthen national defense capability	9.1	11.1	9.8
Develop science and science-intensive production	81.8	88.9	84.3
Extract more mineral resources, oil	6.1	0.0	3.9
Solve ecological problems, in particular decrease pollutions	12.1	27.8	17.6
Create efficient jobs, fight unemployment	45.5	44.4	45.1
Decrease gender-related and urban-rural inequality of opportunities	3.0	5.6	3.9
Improve legislation	27.3	38.9	31.4
Prevent illegal migration from abroad	6.1	5.6	5.9

All young representatives of physical-mathematical sciences agreed that the first thing to be done is to raise the culture and education of people. In women's preferences who are responsible for care of children and the old, an important place is taken by the development of health services. A great role in young people's priorities is played by improvement of legislation. Note that extraction of mineral resources; oil as well as strengthening the national defense was not among the priorities.

What can the young do themselves; the solution of what problems depends just on them? They want primarily "*to draw on the now available experience*".

The sensible approach of the young researchers to such a difficult question can be demonstrated by their statements. They understand that in dealing with serious problems there is no place for young maximalism.

"*There are no sectors where only the young can do something. It is necessary always to rely on the already existing experience"*

"I can speak only about science – the young can bring much good because they have the most updated ideas about methods of scientific knowledge, etc.. they are not involved in under-cover administrative games"

"It is difficult to say… I think there cannot be analogies – in what sectors. Don't simply dismiss the experienced and sage people. In my view, the fact that the young have not enough knowledge and are inclined to certain nihilism is far from being bad. It may bring new discoveries".

"*Actually, the main thing is to give the young leaders a say and right to act and that these leaders are chosen by the young themselves instead of "being put on the position by his rich dad".*

However, the contribution dependent today on the will and choice of the young is seen by the majority in the development of science, science-intensive production and technology, in the solution of demography problem, in proper raising of children, in passing to a healthy way of life, renunciation of alcohol and drugs (Table 3).

Table 3

Replies to the item: "**The solution of what problems, you think, depends basically on the young?"** (% to total answers)

Problems	Men	women	Average
National defense, national security	20.8	20.0	20.6
Development of science, science-intensive production and technologies	70.8	60.0	67.6
Demography, birth rate	54.2	70.0	58.8
Children upbringing. fight children's homelessness	16.7	60.0	29.4
Development of mineral resources, prospecting	12.5	40.0	20.6
New settlements. new housing	29.2	20.0	26.5
Environmental protection	29.2	30.0	29.4
Elimination of gender, ethnic and residence inequalities	20.8	50.0	29.4
Harmonization of ethnic relations, stoppage of combatant operations in Russia	20.8	40.0	26.5
Passing to healthy way of life, renunciation of alcohol and drugs	58.3	60.0	58.8
Fight poverty in Russia	16.7	0.0	11.8
Moderation of global problems (terrorism, AIDS)	29.2	30.0	29.4

It is interesting that all those for whom "well-being and children's life success" are included in the number of the basic components of life success, included elimination of gender, ethnic and residence inequalities as one of the most important paths in the development of Siberia. Obviously, women feel this inequality more painfully.

Expansion of opportunities to choose the paths of development presumed responsibility for decision-making, which it is men who are ready more than women to take on themselves. For this reason, special attention should be paid to preparation of the reserve of young leaders, including women. Today, the young and women are little represented in state bodies. The young are more open to gender equality, and it is important to take it into practical implementation (for more detail, see [11]).

Conclusions:

The study carried out by the Council of Young Scientists (2002-2003) showed how the young researchers of the Siberian Branch of the Russian Academy of Science imagine their social role, sustainable development, and what are their ideas for the future of Siberia.

The bulk of the respondents think that the opinion of the Russian young people is not considered in decision-making process at state and regional levels (63% and 61%, respectively). The opinion of the young is not taken into account in enterprises and institutions – 37% of respondents. It is true that 51% think that partially it is taken into account. However, an appreciable part of the young researchers think that young specialists must come into all above-mentioned bodies (67%) to speak for themselves. Note that some also indicated that as the young have not enough experience and their participation in power bodies is not desirable (12%).

Now, can the young find better solutions than their elder colleagues? The opinions divided about equally, and a slightly higher number of people (47%) think that they could have coped with problems in a better way. A smaller part of the respondents (44%) were uncertain in assessing the potential of the young in this respect. This points out that one of two young researchers has never thought whether he/she is able to change the situation to the better, not seeing for himself/herself a chance to take part in making decisions. We can assume that the wish for presence of young specialists in responsible bodies is of an uncertain character, a "let them take part" kind, without any shaped idea behind these words.

Our survey has performed another important task – the young researchers were given these questions. We think it extremely important to discuss transformational, leadership and scientific potential of the young not only among the young themselves but among the country's leaders as well. But that is rather difficult in our time in Russia. Even in doubt the young researchers see their leadership mission: "I doubt that they would find better decisions but they

could at least lobby the interests of the young and arouse response in public opinion as minimum", - the statement of one of our respondent reflects their overall attitude.

The leader viewed by the young is initiator of ideas (52%), "commander" and "inspirer" (41%), innovator, pioneer (22%), "explorer of the future", discoverer (15%). Most young researchers see the leader as a source of ideas, triggering the process of knowledge and steering this process in the proper line.

The obtained data show that in the Novosibirsk Research Center there is continuity across generations. Scientific mentors are highly respected by young folk. At the same time, the young think that they have certain advantages over elder generations: have better education in information flows (78%), are free from "burden of the past", from ideology (54%), more easily adopts foreign experience and attainments (54%), have a quicker response to arising problems (50%). These are mighty factors for development of Russia, which - if using the "Leadership Development Model" (Bennis and Thomas) – can be considered as *leadership competencies* in a leadership *crucible*. "Leadership is much like other forms of creativity… success, including the kind of success we label leadership, emerges as a result of an individual ability to adapt to a crisis or challenge (the event or situation we call a crucible)", - In this model the crucial role is played by the *adaptive capacity,* which is the number one among the *leadership competencies:* "To the extent that any single quality determines success, that quality is adaptive capacity…which includes such critical skills as the ability to understand context and to recognize and seize opportunities… people with ample adaptive capacity may struggle in the crucibles they encounter, but they don't become stuck in or defined by them" [12, p 91-93].

According to the young researchers, the most important paths of the development of Siberia (the biggest Russian region) that are to be concentrated on, are: development of science and science-based production (84%), affordable housing (67%), raised cultural and educational level of the population (47%), creation of highly effective job positions (45%), substantially increased salaries in the public sector of the economy (43%).

What hinders the development of science? The young researchers of the Novosibirsk Research Center named first the daily wants: unaffordable housing and low salary; second was lowered prestige of science in Russia, absence of strategy for its development; third was poor management and poor equipment of working places of young researchers, primarily underfunding that is the cause for poor equipment of working places and lack of study tours to large centers of science. Lack of confidence in the future prevents a young specialist from taking up the research that is truly interesting to him and thus exploring new fields and seeking solutions of new problems.

The solution of what problems depends mostly on the young? It is basically the development of science, high-tech production and new technologies, demography (raising the birth rate), passing to healthy way of life, renunciation of alcohol and drugs. Women also noted the role of the young in raising the children and elimination of gender, ethnic and residence inequalities.

It is of interest that the answers of young researchers contain the components of leadership but, unfortunately, they do not think of these privileges as of their leadership potential. The young scientists think that it is necessary to respond quickly to arising problems and to be flexible in the assessments of the ongoing changes, but they are not ready to take on themselves the responsibility for the future of the society. One of two young researchers has not even pondered on how he/she can change the situation to the better, not seeing a possibility to participate in making the decisions.

Young people, who see their mission in improving situation in the country, have to bear in mind, that: "Leaders, whatever their field, are made up as such of their experiences as their skills, like everyone else. Unlike everyone else, they use their experience rather than being used by it" [13, p 69].

The study in Siberia has revealed the notions held by young scientists about their role in the development of science and life of the society. Our project is not completed; it is designed for the future. We hope to mobilize young scientists of other Russian regions. Further work in this direction will promote establishment of feedback between the senior and young people; exchange of information, pulling together efforts to study problems and building the future; higher involvement of young people into decision making, formation of a reserve of "New leaders", who can work in teams, manage change, function in a global world and embrace diversity…

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* VCIOM - pan-Russian Center of Public Opinion Research

**For the organization of the poll the information resource of the Council of Young Scientists of the Novosibirsk Research Center of the SB RAS was used. The applied objective of the study was to mobilize young scientists to more active participation in the process of human development and make them better understand their responsibility for this task and seek effective methods for its achievement.

Modern information technologies make it possible to use ever-new variants of communication and methods of study. To reveal the opinions of young researchers about ways of development, we made them cooperate in the mode of "**telework**" (research work often turns not into "telework" by "telepresence", see [Parinov. S. I. (2002), Towards Theory of Network Economy. Novosibirsk:IEIE SB RAS, 168 pp.]. To promote successful cooperation of young researchers, faster exchange of their ideas and to attract colleagues' attention to the research activity of the young a web-site of the Council of Young Scientists of the IEIE SB RAS was developed and used (http://www.econom.nsc.ru/ieie/smu/). In this connection, the software program of online survey was developed. The problems solved by this program include: automatic generation of HTML-pages of the questionnaire, collection of questionnaire replies and their subsequent export to the SPSS format for analysis of the results. The questionnaire data layout is created also automatically. This software reduces "manual" work to minimum, which permits us to recommend it for common use. Its advantages include absence of errors of input, of data coding, i.e., of all those errors that arise at the stage of data entry. Therefore, due to its computerization, further polls are made much easier.

For the express-poll of young researchers from the SB RAS institutes a compact but informative questionnaire have been designed and placed on the web-site. The young researchers were to take part in the poll inside their offices under anonymity secured by full computerization of the poll. For organization of the poll the information resource of the Council of Young Scientists of the SB RAS was used. The poll comprised young researchers of twelve research institutes of the SB RAS. The exchange of views facilitates further cooperation among young researchers and creates a reserve of young leaders in Siberia. On the results of this study the team (lead researcher – E. S. Gvozdeva, prosecutors: A.N. Nurtdinov, A.S. Zhdanov) won the Academic Award of the Administration of the Novosibirsk region (December 2002).

***The statements are given unedited (here in italics)