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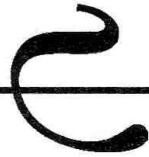
Anniversaries

Doctor of Psychological Science, Professor, member of Russian Academy of Education, Nickolai Nickolaevitch Netchaev is sixty!
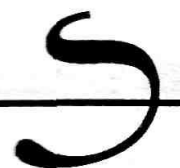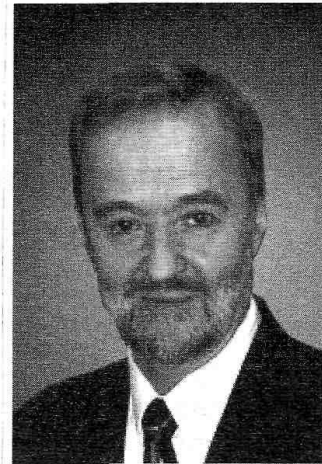
Dear Nickolai Nickolaevitch!

On behalf of Russian Psychological Society, the editors of «Russian Psychological Journal» we wish to congratulate you on the 60 th anniversary. You have started your professional work as a teacher of psychology in Moscow State University, then you have occupied important and influential positions: the deputy director of Science in Scientific Research Institute of high school issues at the Ministry of High Education of the URSS, a member of the Board of State Committee of people's education of the URSS, the head of the Chief Administration of general secondary education of State Education of the URSS. After creation of Russian Academy of Education you have been elected a full member of the Academy and the chief scientific secretary of RAE. Devoting your attention to elaboration of the methodology basis of theory and practice of continuous education and planned development of laws and conditions for professional creative work, psychological and pedagogical problems of vocational training in high school establishments, you have published over 180 published works and you have prepared over 40 authors of master's thesis.

Your contribution to science and education is rewarded by Order of the People's Friendship, the Oushinskii medal and by other medals and decorations. In 1998 you became President prize winner in the field of education.

Highly appreciating your role in development and organization of psychological science, we would like you to accept our best wishes for health, happiness and success in your scientific and pedagogical activity.

Social Psychology

Klueva N.V.

Management training and its impact on organizational development

The article discusses psychological problems of organizing internal company education at Russian enterprises. The characteristics of the organizational principles of the internal company educational system are given, which include the system principle, uniqueness principle, technology principle, principle of investigation by action and learning through action, etc. Two types of education are distinguished: focused and interdisciplinary. The article offers a detailed description of methodological and theoretical foundations regarding the work of a psychologist as an external consultant who works with organization in the interdisciplinary education mode. These foundations include innovation methodology, process-oriented consulting, project approach, and andragogy. The article also presents the results of the author's consulting work with executives of industrial enterprises.

Key words: *psychological consultancy of organizational development, a psychologist-consultant, a system of internal company education, management consultancy, organizational development, innovation methodology, process-oriented consulting, focused education (project approach), andragogy, technologies of adults' education.*

> "The only job worth to be done by a consultant is the one that makes clients and their personnel be better managers".
>
> L. Urvik.

Psychology from our point of view is a tool to self-understanding and development of subjective personality growth. An organization in this concern is a collective subject having its own values, objectives and features to contact the external environment. Psychology involves a person and an organization into a self-changing process. Psychology faces "the purpose to explore and to demonstrate all possible ways for human and

world development. It is the most important of possible spirit growth mediators". [3,c.327]. To fill in the human's life with an existential value is possible only if to give him back his integrity which doesn't represent the sum of object – parts, but requires a subject to be involved in a self-development process. M.K. Mamardashvili described philosophy as an involvement into being. Psychology also involves a human in events moving, it is focused on "life-revealing process". A psychologist describes in knowledge one's individuality as well as favors its growth, appropriate way of its existence. We think that *a psychologist in respect of business structures* tends to form within a personality and organization an ability to solve problems independently and to determine their future development. A lot of consultants nowadays follow the idea of *"organizational development through human resource development"*. According to L. Urvik, one of the leading experts in management consultancy, the only job worth to be done by a consultant is the one that makes clients and their personnel be better managers [16]. This approach is focused on the development of self-creative organizational strengths and is based on either personnel or managers' experience. It contributes to creating of a conventional reality, matching individual and group interests, values and objectives.

The base of a psychologist's work as a consultant in management and organizational development is a start-up of self-organization and self-development mechanisms. *Patterns of our work include the cooperation of a psychologist with key-managers and methods that let us integrate research, training and practice (innovative methodology).*

The priority in psychologists' work has to be given not to methods of collecting sociological and psychological data, but to in-depth going into participants' understanding of strategy and tactics of organizational development, personal meaning of their professional activities, accepting or refusing company's values, mutual analysis of work methods through various organizational forms of reflecting environment.

Our experience and results of our research make it possible to formulate a range of typical features related to the activities of executives, their attitude to personnel [5-7, 16]:

1. Dependence on samples, rules and regulations that have been installed in Russian business as well as on basic changes in economical and social life in Russia. A try to solve problems with the help of past experience can be explained by the fact that majority of executives are not ready to work in a highly unstable environment. The use of this past experience is a try to protect themselves from being incapable to meet this uncertainty and to

work with it. A fear of uncertain situations leads to more formal rules, rejection of creative ideas and finally to stagnation of executive's personality and organization as a whole.

2. Moving responsibility to the others. While realizing that executive's efficiency is decreasing, the following scheme starts working - "we are not allowed to work", "in this country it is not possible to do anything" etc).

3. Focus on short-term objectives instead of strategic perspectives. Difficulties appear in the sphere of strategic planning when it is important to analyze internal and external environment, to find out resources of personnel, to formulate the mission of an organization, its strategic objectives and tasks.

4. Predominance of female origin in organizational management. Prigojin A.I. notes that our culture refers to "male type" based on cult of "great performances", self-sacrifice, and heroic spirit. From there comes inflexibility in human relations (15). In Western Europe on behavioral level the relationships are friendlier; nevertheless people are ready to compete. Winning of the one doesn't mean fail of the others – this important idea didn't find acceptance in Russian business. For some employees the "female" orientation is typical – inactivity, lack of energy, unpretentious needs.

5. At the same time a lot of executives cultivate certain communicative standards based on values of relationship, care and support. The rise of a conflict in the organization is interpreted by executives as a disturbance of "normal" processes. Consequences of such a policy are understandable – acting without development, quietness against reasonable exactingness.

6. Value "fuzziness" of executives. At the heart of human's behaviour are his basic life expectances, i.e. points of view which are defended by executives. Uncertainty of directions among executives and employees lead to impossibility to build common notional environment of professional activities. In the base of this environment is a convergence, i.e. the system of agreements about what is acceptable for the present group of people. We underline this convergence because without agreements the organization can not exist.

7. Uncertainty in personal goals. For many executives it is hard to describe his or her personal and professional goals, to design short-term or long-term career. Sayings like "as it will go", "I don't know what to expect", "I am not sure it depends on me"

show how low the subjectivity of executives is to be responsible for events happening in his/her life.

8. Executives have difficulties to mobilize their personnel to solve common problems. There is a pronounced problem to be incapable to delegate responsibilities to employees. Behind it can be seen fear to lose power and control over the situation. At the same time this fear to lose power ends with a refusal to attract personnel to manage the organization. Prevailing type of organizational and managerial coordination is coordination-plan instead of coordination-feedback. That is why prevailing management style is based on communication type "from top to bottom". Another management style based on "horizontal" communication type has just started to be introduced in organizations.

Meanwhile a lot of executives realized one of the most important objectives – increase of company's competence based on improving the personnel performance. That is why human resource management is becoming one of the strategic organizational goal together with cost management, information management, quality management and others. The system of in-company training based on the idea of continuous training in professional and socio-psychological competence of personnel can provide an organization with right answers to current and perspective tasks. It takes an important place in human resource management, together with recruitment, selection, appraisal and attestation of personnel, career management, motivation and stimulation systems, introducing shared standards and values of organizational behaviour, etc.

Let us focus on one of the approaches in building-up the system of in-company training which has been designed under the guidance of the author by the group of specialists from Jaroslavl Sate University and Jaroslavl Professional Training Institute. It is supported by experience to work with big industrial enterprises of Jaroslavl city and region [2,8,10].

From our point of view effective in-company training relies upon some basic principles:

- **Change principle**. Any organization which tends to be competitive live in the process of development that has to be supported by human resources able to work out short-term and long-term tasks. In this case organizational training can be reactive (to insure company's activities) and pro-active (focused on tasks to be raised by organization for the nearest and distant future)

- **System principle** (training covers all aspects of organizational life, its relations with external environment, methods of communication inside the company, attitude of executives towards their employees etc). For us the idea of system principle can be understood through graph 7C presenting main organizational elements. Each of these elements has its own impact on the training.
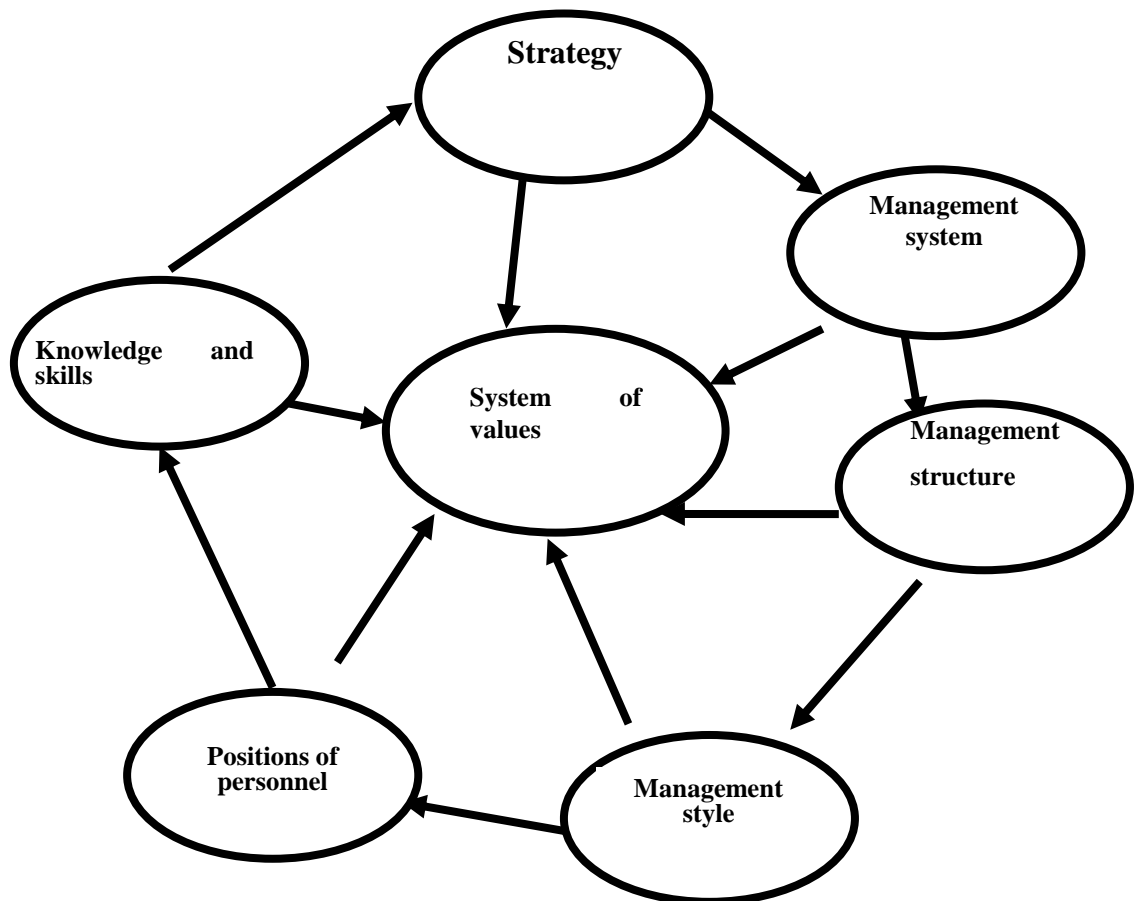
- **Human values and positive approach principle**. Training structures, internal and external consultants, human resource managers, psychologists who use personal potentials (but not its constraints) are more successful in reaching objectives of human resource and organizational development.
- **Principle of investigation by action and learning through action.** Adults' education assumes to find out real practical problems in professional activities, their investigation, and ways of being solved. We think that the move from action to

knowledge instead of informing about problems arisen is the most reasonable.

- **Principle of uniqueness.** Training programs are built according to organizational uniqueness, its history, its position in the market, organizational culture, experiences to train the personnel (positive or negative).
- **Technology principle.** In modern social psychology of adults' education, practices of management consulting and organizational development there exists already the whole set of efficient techniques (different games, case studies, methods to activate personal resources, project education, trainings etc). That is why the work of a specialist in in-company training must be very technological, and methods used in by one consultant or trainer can be applied by the others.

We distinguish two type of education in working with organizations:

Focused training: computer skills, training of technical personal, programs to prepare personnel for obligatory certification etc.

Interdisciplinary training: team-building, "Strategic mentality", "Leadership techniques", "Motivations", programs to develop human resource potentials in the frame of employer's development strategy.

In both types of education the psychologist plays a big role. In particular to start the first type of education it is necessary to provide a special training of the trainers based on andragogy, psychology of communication, psychological features of adults as subjects of education, methods of adults' education.

In interdisciplinary education a psychologist can initiate a targeted work to introduce certain programs (leadership or teambuilding, conflict competence of managers) [17]. Besides he or she can provide a socio-psychological review of project work. For example, the success of the project "Elaboration and implementation of quality management system" is based on effective team work, ability of project initiators to become real leaders, to manage conflicts by innovations, to motivate the personnel to be involved in a project.

The article offers a detailed description of methodological and theoretical foundations regarding the work of a psychologist as an external consultant who works with organization in the interdisciplinary education mode.

From our point of view **adults' education is based on**:
- Innovation methodology.
- Process-oriented consulting.
- Project approach.

- Andragogy.

Innovation methodology is an instrument of research and development of working systems, social groups as agents of this activity and personality on the account of self-development during creating problem-solving process (1,2,13). Otherwise the nature of education under realization of innovation methodology is the following: while investigating we learn, while learning we develop ourselves.

With the course of innovation education comes:

- Learning to apply new problem-solving technologies (building up an effective thinking),
- Building up socio-psychological competency (development of effective communication skills) to solve problems arisen while building a communication,
- Strengthening of personal potential to break personal difficulties. This mode is the most effective in training the executives, top-managers and managers of all levels (sales managers, in-company training managers, human resource managers etc).

Education based on these principles begins with diagnostic innovation seminar where the participants (with the help of consultants) analyze current and expected situation in their company, learn to formulate the problem, define its cause and reasons. It is important that education develops in conditions of group interaction. It allows to master "here and now" new techniques of building up effective interactions. With this mode a psychologist is a resource person possessing problem-solving means, socially competent and enabling the development of the others.

Experiences in management consultancy (1997-2004) reveal some specific psychological problems [1]:

- Extremely *low level of self-confidence,* of finding the way out of complicated situations, lack of faith in own resources, powers, abilities as well as *bad knowledge of oneself* and own features (very often these characteristics appear in paradox forms – a show of self-confidence, powers, categorical decisions etc); at the same time according to the precise descriptions of authoritarian syndrome, a lot of managers demonstrate *too high readiness to follow the power, to avoid critics while getting advice*;
- Extremely strong *orientation to simple, quick and easy solutions* (even in situations where such an approach is obviously a failure), *unwillingness to go deep into* a problem and readiness to be satisfied without looking at many details;

- Almost total *choice of intellectual, rational ways* to meet problems, to understand oneself, other people and present situations from one side, and total underestimation or ignoring *of emotional, intuitive resources* from the other; exaggerated and inadequate *piety of the word* (especially written) and *neglect of emotions, feelings.*

Taking intro account these features, investigations of values and life goals of executives, rules and values of corporate culture, the system of psychological accompaniment of an organization has been elaborated on the basis of existential approach. This program is focused on building shared values, coordinating interests and positions in organizational conventional reality.

It has the following objectives:
- To contribute to behaviourial changes when a manager can live more efficiently, be satisfied with his/her life in spite of some existing social restrictions.
- To develop skills of problem overcoming when meeting new circumstances and requirements.
- To strengthen the decision-making process. There are a lot of things one can learn during psychologically-oriented training: independent actions, time and energy management, evaluation of risks, investigation of values in the frame of which the decision is taken, evaluation of personal features, overcoming emotional stress, realizing influence of goals on decision-making process, etc.
- To develop skills of starting and supporting interpersonal communication. Communications with personnel take a great part of executives' time, and many of them have troubles because of low level of their self estimation or lack of social skills.
- To enable the realization and potential growth of executives.
- To build an ability to design his/her professional activity, to develop analytical skills, to analyze key problems.

Consulting process. The main idea of psychologist's work to solve important organizational problems is to build a process that will give to the organization a chance to find its best solution. We divided the psychologist's work into steps in order to solve problems in a most efficient way.
- **Entrance.** Meeting with executives, evaluation of readiness for changes, bringing out motivations to cooperate with a psychologist, match of declared problem with the reality, understanding of

possibilities to build up working relations, orientation in executive's and his/her team values. The client appraises experience, knowledge, recommended technology. On this step the technical task, result expectation, mutual responsibilities, terms of payment are precised, the trust between psychologist and client is built.

- **Contract** – process of building up new communication rules between the consultant and the client, of setting the work objective. *Objectives* must be *realistic* (reachable); *specific* (external observer has to understand the expected result); *measurable* (what are the criteria to prove the objective is reached); *adjustable* (it has to be clear if there is a move towards the objective) and *exciting* (customer and client want to achieve it).

- **Diagnostic** – gaining information, its analysis, discussion and presentation of results. On this step one can use interview, questionnaire, testing, analysis of documents, participation in evens, financial, marketing and etc. analysis. We note that while working with organizations in most cases we use competencies of different specialists (in marketing, finances, systems, methodology etc.). It allows to overview the organization as a system to start its development process. In our work we prefer to use innovation seminar as a group method of current situation diagnostics. The use of most of above-mentioned methods allows involving personnel in case analysis.

- **Planning of changes** supposes defining different ways of problem solving and planning its activities. This step underlines opportunities and threats of organization and its specific departments, as well as objectives, methods and possible ways to solve the problem. Here are some technologies we use during this step: system and functional analysis, scenario method (A.I. Prigojin), technology of solving complex and poor-structured tasks (V.S. Dudchenko), SWOT – analysis. When building a common view of expected future, good effect is presented by the use of metaphors, body-oriented procedures, and projective drawings.

- **Implementation of suggested changes** – building up a development headquarter and teams to follow the results got during the previous step.

- **Evaluation of efficiency, corrections or revision of changes.**

Project approach. A lot of organizations nowadays use a project approach in their personnel training. For example, on designing a new management structure except consultancy, the customer assumes informing

his/her employees (the direct training objective) about modern management approaches. Implementation of cost management system includes training of those people who will take part in designing and implementing this system in their organization. Developing the information security system also has to be supported by relevant personnel competencies. Psychologist working with the organization may moderate the project (6). In this case the psychologist is responsible for the following problems: personnel motivation to be involved in project work; creating conditions for talks (important element of designing and implementing the project is an agreement of all people involved about the share of responsibilities); analysis of threats and development of technologies to overcome them. Otherwise to elaborate and implement the project, it's necessary to "pack" it in a right way, to make it meaningful for employees, in other words to rise its attractiveness. As an example: design and implementation process of ISO system in most companies where we worked was seen as a threat and even provoked hard negative actions in the beginning. That is when setting a strategic task "To implement the quality management system in organization X" it is necessary to have good psychological diagnostic of the organization, to evaluate motivational level of executives and staff, analysis of organizational culture, to find out deep reasons for resistance. That is why we created specific technologies that allow in rather short period of time (6-8 hours) to draw a psychological portrait of an organization. Similar work is done when reforming companies, implementing quality and environment management systems, developing strategic goals, building corporate culture, starting in-company training.

Andragogy. "From acting to learning", not on the contrary: it is the approach that we follow in our work with organizations. "Don't give answers to the questions that haven't been asked!" This sentence describes a general idea of andragogy (adults' pedagogy). If a group or developing personality has no questions, it isn't necessary to give answers. Lecturing can be chosen only upon group request. Demand for lectures on psychology of communications, psychology of management, conflictology etc. is quite high. But even if the teacher is very experienced, these lectures can hardly change the points of view or mentality, increase socio-psychological competence of the personality. Informing about self-development problems, professional growth is an important component of our work but only when needed, when it comes clear what a client really wants to know, and he or she will do with it. This approach contradicts with *traditional pedagogical model* in which a trainee is more an object that a subject of training activity. A trainer in our approach together with

the group or a person defines the main parameters of educational process: objectives, content, forms and methods, means and educational resources.

When implementing adnragogy approach in adults' education we use a lot of new forms and methods of innovation ("active") education: investigation, playing, imitation, projects, based on principles of problem-orientation, personal activity, integration of theory, practice and learning, development of creativity in group work. The experience of their implementation proves they can provide solutions to educational tasks where traditional education fails:

- Development of investigational attitude to the reality;
- Building up not only cognitive but also professional motives and interests;
- Development of system mentality;
- Training in team thinking, communication on horizontal and vertical levels, individual and group decision-making, responsibility to work and to other people, creativity. (A.A. Verbitski).

Our experience of working with large industrial companies, small and medium businesses showed the efficiency of the above mentioned approach. Almost all our clients increased their market competitiveness, made the system of in-company education become an important component of human resource management, designed and implemented their projects.

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Sidorenkov A.V.

Microgroup theory

Microgroup theory is a socio-psychological theory of a small group. The main idea of the theory lies in the analysis of group processes and phenomena through the prism of informal subgroups as collective activity subjects and also non-involved-in-them members who comprise the group. In the given paper it is presented in the view of general and particular positions that reflect two interconnected conceptual scopes – group as a system with its phenomenology and group dynamics. The most fundamental constituents of group activity are reflected in general postulates. Particular postulates are formulated on the basis of general ones and they describe concrete phenomena, their manifestation and modification at the group level, at the subgroup level, and also at the individual's level.

Key words: *small group, informal subgroup, socio-psychological structure, group dynamics, contradiction, integration–disintegration, phenomena.*

Nowadays there is a great number of small group theories; in each of these theories specific subject-matter, a circle of phenomena under study, conceptual apparatus are identified. All these theories can be grouped variously, for instance, depending on the selected-for-analysis level of group activity and the subject-matter.

The subject-matter of different theories is referred to varied characteristics of either the individual's level or group level. The subject-matter at the individual's level is presented by needs, motives (for example, three-dimensional theory of interpersonal behavior), behavior (theories of social exchange and dependency, theory of rational self-interest, theories of mutual interest and collective action), application of symbols (symbolic convergence theory), cognitions (theory of social comparison processes, social identity theory, self-categorization theory), emotions (sociometry theory), interpersonal relations (sociometry theory, theory of activity mediation in interpersonal relations). The subject-matter at the group level is group parameters (parameter conception), characteristics of group activity in environment (theory of realistic conflict).

In spite of a great number of available theories the general state of theoretical knowledge in the field of a small group, in the view of many specialist, leaves much to be desired. First, each theory has no conceptual framework that would permit to explain simultaneously a wide spectrum of phenomena and processes of both external and internal group activity. This

is determined by several circumstances among which only two ones are to be noted, those having direct relation to this information. In the majority of theories an emphasis is made as a rule on a certain one specific phenomenon or process (for instance, on social comparison or symbol application), that substantially restricts theory potentialities. Therefore, ideally, a theory must be based on applying and analyzing fundamental processes and phenomena that will permit to investigate effectively different particular processes and phenomena. The other circumstance is that actually in all theories of a small group, informal subgroups (as objective reality and the level of group activity), their psychological characteristics, internal and external ties are not taken into consideration. This looks paradoxically as informal subgroups are an integral attribute of an overwhelming majority of small groups of different types. Second, availability of a majority of theoretical approaches in various scientific disciplines (including those within social psychology) is regarded today as one of the main factors that produced a problem of interdisciplinary diversification in the field of small groups [2,7,8].

There are two trends of further movement on the theoretical plane of science. The first of them is connected with providing interdisciplinary integration [1,3-7,9,12]. The second trend assumes creation of the theory of a high generalization level that is to set new coordinates for research and conceiving group activity. This s a complicated task but it acquires more and more acute character in the scientific community.

The goal of the paper is to give a comprehensive and systematized representation of a new socio-psychological theory of a small group – microgroup theory [10,11]. The main idea of the theory lies in the analysis of group socio-psychological processes and phenomena through the prism of informal subgroups (microgroups) and also non-involved-in-them members that comprise a small group. For instance, manifestation of some phenomena (cohesiveness, compatibility, conflicts and other things) at the group level is determined by socio-psychological characteristics of subgroups and interrelationships between subgroups, but other phenomena (adaptation, informal leadership, guidance and so on) – by the individual's position in the context of involvement/non-involvement in the subgroup. Besides, the theory is oriented towards the analysis of subgroups themselves in the context of the whole group and external conditions of group life-activity. In addition, it is not limited by the analysis of some single subgroup characteristic, but takes into account demand-motivational, socio-perceptual and behavioral aspects of internal and external subgroup activity.

Studying all group activity in the context of informal subgroups we quantitatively and qualitatively draw boundaries of the analytical perspective apart at the expense of : (a) reconstructing all group constituent components as a system, (b) re-comprehending relations to be investigated, and (c) examining a subgroup along with its relations both as a subject-matter and as an analysis unit of group processes and phenomena as a whole. Thus, attention is focused on relations 'subgroup–subgroup', 'subgroup–individual', 'subgroup–group', 'individual–subgroup–individual', 'individual–subgroup–group', 'individual–subgroup–community', 'individual–subgroup–group–group/community', 'subgroup–group–group/community', 'group–group–subgroup', 'group–group–subgroup–subgroup'. Some relations are principally novel for research (for instance, 'subgroup–subgroup' or 'subgroup–group'), but other relations ('individual–subgroup–individual', 'individual–subgroup–group', 'individual–subgroup–group–group/community') represent by themselves widening relations being studied conventionally ('individual–individual', 'individual–group', 'individual–group–individual', 'individual–group–group/community'). Advancing in the scope of the above relations one may realize group processes and phenomena in the other view. There arises an opportunity to coordinate with each other all three levels of group activity (individual, subgroup, group), to comprehend more adequately each of them separately and external/internal group activity as a whole.

Microgroup theory is based on five key concepts of the first order and two concepts of the second order. Three concepts of the first order – 'informal subgroup', 'involved-in-subgroup individual', 'non-involved-in-subgroup individual' – make up a 'socio-psychological structure' (the concept of the second order) which reflects the group structure. Two other concepts of the first order – 'contradiction' and 'integration-disintegration processes' – comprise the basis of 'group dynamics' (the concept of the second order) fixing the modification of a group, subgroup, individual. All these concepts taken together make up a conceptual framework. Consider three circumstances. First, all concepts are inseparably linked with each other. Second, in fact no one of the existing theories operates with underlined concepts of the first order. As for the concepts of the second order, they are filled with another content differing from that which one can often come across in the literature. Third, concepts of the first order reflect basic, initial, but not particular-in-their-content phenomena. Thus, the theory includes two conceptually interrelated spaces: (1) group as a system and its phenomena, and (2) group dynamics.

Microgroup theory contains general and particular postulates. The most fundamental constituents of group activity are reflected in general

postulates. Particular postulates are formulated on the basis of general ones and they describe concrete phenomena, their manifestation and modification at the group level (group phenomena as a whole are analyzed in the light of subgroups existing within the group), at the subgroup level (subgroup phenomena), and also at the individual's level (in the context of the individual's involvement/non-involvement in a subgroup).

GENERAL THEORY POSITIONS
KEY NOTIONS

Informal subgroup is the total sum of group members united on the basis of one or several psychological properties more common and meaningful for the time being compared with other group members.

Informal subgroups are presented as varied objective rather than subjective socio-psychological categories. Depending on the activity perspective there are *situational* and *relatively stable subgroups*. Situational subgroups arise for solving a concrete tactic task assuming limited-in-space-and-time activity. Relatively stable subgroups are formed on the basis of strategic intentions (conscious and unconscious) of members or with respect to their constant activity and conditions of being in a group. Depending on cohesion motivation, activity vectors and peculiarities of members' relations, subgroups may be *task* and *socio-emotional*. Emergence and subgroup activity of a task type are determined by individual pragmatic goals of members or/and by a purpose of group activity. At the basis of formation and life activity of subgroups of a socio-emotional type there is attraction and sympathy, and the basic goal of such subgroup members lies in supporting good relations. Subgroups may be *decentralized* and *centralized* depending on means of members' relations within them. In the decentralized subgroup all members possess similarity at least by one key indication. In the centralized subgroup there is a sense of the common among members with one/two individuals, and through him/her with the rest subgroup members. Listed typologies have some convention which is of necessity for more suitable analysis, for in practice one cannot often observe subgroups representing themselves this or that type of formation in a bright fashion. Side by side with subgroups in the group, *intergroup subgroups* may arise that comprise people involved in different small groups of the same broader social community (secondary groups).

Socio-psychological structure of small group is informal subgroups and non-involved-in-them members who possess general and specific socio-psychological characteristics and are in certain relations to each other and to the group as a whole.

Non-involved-in-subgroups members ("self-dependent members") are not completely autonomous, in no way related to other group members. In many situations they are oriented to the position of those or other subgroups towards a certain issue. There are two types of members of such a category. Some people prefer to keep a distance from the rest of group members and do not join any subgroups. Others experience desire to be involved into any subgroup but this subgroup proves to be closed for them. One more category is "shuffling" members. They tend to be involved simultaneously into several subgroups without entering close relations with them.

We shall consider external and internal *contradictions* (but not needs or conflict) as a universal self-transformation source of a small group, informal subgroup and personality. Contradiction as opposition and negation of sides initiates and intensifies intragroup and intergroup interaction, socio-perceptual and affective processes of group members.

Integration and disintegration processes. External and internal processes of integration and disintegration (but not differentiation or stability–instability, order–chaos, and so on) are a universal mechanism of group dynamics. Transformation mechanism is latently reflected in the dialectical law "the unity of mutually excluding and simultaneously mutually supposing opposites". If this law is to stratify into two constituents, then integration process are referent to "the unity of mutually supposing opposites", but disintegration process – to "the unity of mutually excluding opposites". Both processes are interconnected and linked to contradictions.

Group dynamics is the transformation of the whole group socio-psychological structure or its separate components. First of all, this is formation, transformation, destruction of subgroups and their external relations (i.e., of each subgroup with the rest of the group).

INTEGRITY AND COMPLEXITY OF SMALL GROUP

Integrity of small group and informal subgroup. Institutionalized (formal) small group is initially characterized by social integrity, whereas its psychological integrity is a result of group activity that rarely occurs in practice. Within the foundation of group social integrity there are relations set by the social structure (society) and attached to the similar social activity set from outside.

Psychological integrity of small group depends on the relations between subgroups, subgroups and "self-dependent" members. It takes place mostly when all members are obliged to be clearly aware of their

group affiliation and necessity to combine efforts – in case of opposition of the whole group and internal social context that bears a threat for "I–image" and "We–image".

A subgroup is not set from outside, but is initially determined by individual characteristics of the members and possesses its psychological integrity. Within the foundation of subgroup integrity there are those or other psychological relations (including perhaps those concerning group activity), which in any concrete case are determined by the specific motives of uniting people into a subgroup.

Complexity of organizing a small group. The general indication of group complexity as a system is the formation out of the sum total of single individuals of socio-psychological structure. Group complexity is determined by several variables: (a) a number of subgroups, (b) measure and content of relations between subgroups, between subgroups and non-involved-in-them members, and (c) measure of realizing subgroup functions with respect to the group. The greater the number of subgroups is, the stronger the bond between them (integrative and disintegrative content), and the stronger subgroup functions are expressed with regard to the group, the more complex the organization of small group is.

INFORMAL SUBGROUP AS A COLLECTIVE SUBJECT OF GROUP ACTIVITY

Group activity is represented not only by individuals (P – active mode) or group activity as a whole (G -mode), but also informal subgroups (S- mode). In the last case subgroups represent collective subjects (communication and co-activity subjects) who focus their members' activity to themselves (inner vector) and to the group (outer vector).

Internal vector of individuals' activity concentration.
- Relation density and interaction intensity within subgroups are considerably higher than in the entire group.
- Subgroups, distinct from single group members, are characterized by the same properties as the entire group is. Moreover, some properties (cohesiveness, compatibility, identification, reference, adaptation, psychological impact) are much stronger, but other properties (conflicts, competition, or various forms of interaction minimization) are weaker expressed in subgroups than in the group as a whole.
- As subjects of life activity, subgroups have their own goals, norms and values limiting members' behavior within subgroups.
- Subjects acquire functions with regard to their members

External vector of individuals' activity concentration.

- Subgroups possess a certain psychological status in the group in the same way as single members do, though a status of another kind – similar to the status characteristic for the entire group in social environment. This status will define the measure of subgroup influence on the group activity.
- Subgroup goals, norms and values regulate behavior of its members not only within the subgroup, but also in the context of the entire group and, probably, beyond the group, with such parameters of a leading group being often common group ones. That is, subgroup goals and norms prescribe behavior of the rest group members, at least in meaningful situations.
- Subgroups in this or another way fulfill functions with regard to the group as a whole .

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CAUSES OF ORIGIN AND FUNCTIONS OF INFORMAL SUBGROUP

The only common indication underlying the formation of small group does not ensure its formation as a stable psychological community, for it does not objectively reflect a broad specter of individual goals and motives of group members.

The unification of group members into subgroups is connected with sharpening contradictions when a group as a whole is unable to realize these or other functions with regard to individual goals and needs of members proper. That is, a subgroup assumes those functions with respect to the individual, which are traditionally prescribed to a small group.

With regard to its members a subgroup fulfills the functions of: informing, providing support for realizing individual goals, ensuring individuals' realization of social needs, providing security within a small group, and adaptive, normative functions as well. With respect to the group a subgroup may realize the following functions: of regulating/stabilizing

group activity, **group assignments fulfillment**, organizing and coordinating activity of the entire group, and a normative function.

By intensifying disintegrative group interaction with external social context (for instance, with the other group), group function to provide support for all members increases.

MOTIVATION AND SOCIO-PERCEPTUAL PROCESSES IN FORMING INFORMAL SUBGROUP

Motivation. The analysis of motives for psychological cohesion in a small group is not adequate for it results in too averaged characteristic in the entire group. Therefore it is necessary to analyze motives of uniting people into subgroups. Group members are united into a subgroup on the basis of not a single motive, but concurrently on the basis of several motives that are common for majority of them. Different subgroups of the same group have not only specific motives, but may have similar-in-content motives.

Socio-perceptual processes of organizing group members into subgroups are those of comparison and categorization in accordance with significant indications, interpersonal and microgroup identity (identity with a subgroup).

Comparison is made concurrently by means of similarity and distinction and assumes simultaneous comparison with other members and between themselves. Comparison in combination with categorization ensures leaving the interpersonal level for the level of comparing identified categories of people within the group, even in case they are not yet presented in the aspect of really formed subgroups with fixed boundaries. While approaching other people and forming groups microgroup comparison (comparison of one's own subgroup with other subgroups) comes to acquire greater importance than interpersonal one.

Involvement in a relatively stable subgroup with those people that have common meaningful properties bears with itself microgroup identity that is more expressed than group identity in subgroup members. Group identity will dominate either in case of meaningfulness loss of subgroup membership or in the situation of opposition of the entire group and environment, being a threat for "I–image" and "We–image".

ACTIVITY OF INFORMAL SUBGROUPS AND PERSONALITY

Intragroup activity is to be considered as activity of subgroups and non-involved-in-them members, as interaction among all of them.

Interaction between subgroups within the group in its content being similar to the interaction between groups.

Behavior of a subgroup representative in the group has not only personal character but is that of a representative of this subgroup. That is, this person's activity is determined by socio-psychological characteristics of his subgroup rather than his individual psychological peculiarities. As a representative of a stable subgroup he manifests himself in the de-centered fashion in view of norms and values of his entire subgroup. This is especially notable in interaction with representatives of other subgroups.

Microgroup predetermination of human social behavior goes far beyond the group if there is a high level of his identification with his subgroup**, microgroup identity and references**. **First of all**, in direct group contact with environment this interaction will be estimated and realized by the individual from the position of his own subgroup, but not only from that of the entire group. **Second**, in different situations having nothing to do with group membership, an individual may construct his behavior rather as a representative of a subgroup than of a group.

Behavior of people non-involved in subgroups depends on their psychological qualities or either on orientation towards a concrete subgroup or on affiliation to the group as a whole.

CONTRADICTIONS

Both contradiction and integration-disintegration processes in the group may be regarded in accordance with two types of relations: (a) subject–subject (e.g., individual–individual, individual-group), and (b) subject–performance/conditions.

Types of socio-psychological group contradictions. In the group different types of contradictions arise.

1. Interpersonal contradictions on the foundation of individual goals and members' needs: (a) between members within an informal subgroup, (b) between members of different subgroups, (c) between non-involved-in-the-subgroup members, and (d) between subgroup representatives and non-involved-in-them members.
2. Microgroup contradictions on the basis of goals and needs of informal subgroups: (a) between subgroups, (b) between single members of various subgroups as representatives of subgroup, and (c) between subgroup representatives and non-involved-in-them members.
3. Intergroup contradictions on the foundation of group goals and needs.

4. Individual-group/microgroup - between goals, group members' needs and opportunities of their satisfaction in the group (or subgroup).
5. Status - between members and a group official supervisor.
6. Activity - between group members' opportunities and requirements of performance/conditions: (a) between high opportunities and low requirements, and (b) between low opportunities and high requirements.

Listed above contradictions are most common for a majority of small group types. However, in each concrete group they are filled with their specific content.

Emergence and development of the same contradiction may occur on different grounds.

Kinds of contradictions are interconnected (with regard to direct and reverse ties), and therefore change of some contradictions entails that of others.

Contradictions and group structure. First, in different structural group components contradictions will be presented variously. For instance, in the subgroup contradictions are less expressed along positions significant for its members (at personal and microgroup levels), and if they are sharpened, then they are more effectively resolved than in the context of the entire group. Second, subgroups, not only separate members are subjects and objects of contradictions of different types and to this or that extent are a source of contradictory tendencies of the entire group. Third, taking into account all types of group contradictions in their composition, on the one hand, and socio-psychological group structure, on the other hand, will allow to approach systematic analysis of contradiction phenomenon in a small group.

Contradiction and socio-psychological impact on the group. Any impact may be reduced to handling contradictions (smoothing, resolving and initiating, sharpening), and through them – to integration and disintegration processes in the socio-psychological structure of small group.

INTEGRATION AND DISINTEGRATION PROCESSES

Correlation of integration–disintegration processes. These processes are displayed: (a) concurrently and in interrelationship that is determined by presence of different contradiction grounds, by different interaction levels (personality–subgroup–group–external social context) and by different realms (external and internal, task and socio-emotional) of

group activity, and (b) consistently that is defined by stages of developing and resolving contradictions.

Different realms of group activity and integration–disintegration processes. First, increasing one process in any sphere of group (or subgroup) activity causes manifestation and enhancement of the opposite process in the other activity sphere. Second, integrative or disintegrative transformation of one group (or subgroup) parameter fixing some activity aspect may evoke corresponding transformation of the other parameter reflecting the other aspect of group (subgroup) activity. Third, predominance of integration/disintegration process in absence of unfavorable/favorable internal and external conditions leads to intensification of the corresponding process.

Group activity levels and integration–disintegration processes. Integration–disintegration processes (and contradictions generating them) should be considered on the following interconnected planes: between a group and environment – between subgroups (between a subgroup and environment, between a subgroup and a group) – within subgroups (between an individual and subgroup, between individuals beyond the subgroup context).

Integration–disintegration processes and group phenomena. These processes present themselves an essential tissue which is embodied into concrete–in–content forms of individual's self-manifestation (for instance, personalization and depersonalization), individuals' interaction (cooperation and competition, collaboration and conflict, assistance and counteraction), group phenomena (cohesiveness, compatibility, reference, adaptation, leadership, social influence). The notions "integrative phenomena" and "disintegrative phenomena" are conventional, for any phenomenon contains in its basis simultaneously integration and disintegration processes, but with a different measure of their expressiveness.

Contradictions and integration–disintegration processes. A high level of external group (subgroup) contradictions defines a higher level of external disintegration and internal integrity. Conversely, a low level of external group (subgroup) contradictions determines a lower external disintegrity and internal integrity. At the same time there is no similar connection between contradiction intensification and disintegration manifestation. Intensification of external group (subgroup) contradictions may lead to actualization of not only external disintegration, but external integration as well.

EXTERNAL INTERACTION AND DYNAMICS MECHANISM

The key characteristics of interaction are: (a) interaction content (integration, disintegration, **relative social isolation**), (b) measure of usefulness of interaction outcome (effectiveness–ineffectiveness).

External subgroup interaction and its internal processes. Subgroup integration with the entire group (a part of the group) is connected with integration weakening within the subgroup, but disintegration is linked to integration intensification within the subgroup. Regular ineffectiveness or in some cases high intensity of external disintegrative subgroup interaction results in disintegrativeness intensification within the subgroup and in the long run in its partial or complete break-up.

External group interaction and its internal processes. Integration of a small group with environment (for instance, with the other group) leads to eroding group boundaries, to reducing its internal integrativeness and destruction of its socio-psychological structure. Enduring and intensifying external group integration will evoke in some subgroups without evident "integrative" phenomena distortion of boundaries and disintegrativeness increase, and in the other subgroups, in contrast, enhancement of their internal integrativeness and impenetrability of boundaries.

Intensification of disintegrative group interaction with environment evokes integration increase of the entire group and integration reduction within subgroups. Regular ineffectiveness or in some cases high intensity of disintegrative group interaction with environment causes disintegrativeness increase between subgroups and enhancement of integrativeness within subgroups or changes structural components (break-up, regrouping, emergence of new subgroups). Group restructuring may lead to its qualitatively new external activity or to resistance increase towards environment.

Limitation of social group contacts with environment determines pronounced group disintegration as a whole and integration increase within subgroups.

Preservation of institutionalized (formal) group in the process of its intensive integrative or disintegrative interaction with environment is ensured by both temporal or stable transformation of socio-psychological structure and by availability of social integrity.

PARTICULAR THEORY POSITIONS

COHESIVENESS

Subgroup cohesiveness in accordance with those or other grounds (**attractive**, cognitive and/or interactive, task and/or social) is much higher than cohesiveness of the entire group or the sum total of "self-dependent" members on the same grounds. Integration increase within the subgroup results in increase of subgroup cohesiveness, but disintegration increase leads to its reduction.

Group cohesiveness. Availability of subgroups in the group signifies that group cohesiveness must be studied from the viewpoint of subgroup activity and non-involved–in–them members, relationship between them by those or other grounds, but not only in view of the relation "individual–individual" or "individual–group".

External subgroup (group) interaction and cohesiveness. External subgroup integration determines cohesiveness decrease, but external disintegration – subgroup cohesiveness increase; predominance of internal integration over external one, that of external disintegration over internal one will cause subgroup cohesiveness increase. Regular ineffectiveness or in some cases high intensity of external disintegrative subgroup interaction leads to subgroup cohesiveness decrease.

In case of limiting relations of a small group with environment, cohesiveness increases within subgroups and group cohesiveness decreases as a whole. By intensifying disintegrative group interaction with environment, the entire group cohesiveness increases at the expense of human consolidation around a leading subgroup or a single leader, and also at the expense of openness increase and subgroup cohesiveness decrease. In case of lasting and increasing external group disintegration and regular ineffectiveness of its activity, cohesiveness decrease of the entire group and cohesiveness increase within subgroups will occur.

COMPATIBILITY AND CO-ORDINATION

Compatibility and co-ordination of subgroup members at the socio-psychological level are much more manifested within stable subgroups than in the entire group. Compatibility are more expressed in subgroups with a higher level of cohesiveness, identification and reference.

Subgroup compatibility and co-ordination. The analysis of socio-psychological compatibility and co-ordination of group members should be made by means search relation between subgroups, and not only by means relation between single individuals.

IDENTIFICATION

Identification within stable subgroups is more expressed than in the entire group, between representatives of various subgroups or among "self-dependent" group members. "Self-dependent" members are more often

identified with subgroup representatives than with the same ones but non-involved–in–subgroup members. Integration increase within a subgroup is associated with identification increase within a subgroup, and disintegration enhancement – with its weakening.

External subgroup (group) interaction and identification. External subgroup integration determines weakening identification, and external disintegration – identification increase within a subgroup. Regular ineffectiveness or in some cases high intensity of external disintegrating subgroup interaction causes reduction of microgroup identification.

Under ordinary conditions of group functioning, identification of human beings with the entire group is weaker expressed, and interpersonal identification is stronger within subgroups and also among "self-dependent" members, and between representatives of different structural categories. Limitations of group ties with environment, on the one hand, leads to levelling identification with a group as a whole, and, on the other hand, to dominating microgroup identification over interpersonal one, i.e., group members with their subgroup, and "self-dependent" members with some subgroup. In intensifying disintegrative group interaction with environment, identification with the entire group tends to predominate, and interpersonal and microgroup identification will be less expressed. In case of enduring and increasing external group disintegration and regular ineffectiveness of its activity, group identification decrease and microgroup identification increase will take place.

INTERPERSONAL AND MICROGROUP CONFLICTS

Conflict is one of the forms of disintegrative interaction of the parties caused by contradictions worsening.

Not only single individuals, but subgroups as well act as subjects and objects of conflicts. Conflicts within subgroups, between "self-dependent" members and between members of different subgroups pursuing personal goals are *interpersonal* by their nature. *Microgroup conflicts* (conflicts between subgroups) have content similar to conflicts between groups.

Interpersonal conflicts within stable subgroups are more transient and more often have another importance and consequences for their participants, than conflicts between representatives of different subgroups.

External subgroup (group) interaction and conflicts. Enhancement of subgroup (especially microgroup) external conflictness is associated with weakening its formal conflictness.

Under ordinary conditions of small group life-activity, conflicts are presented by an interpersonal form. By limiting group relations with environment, microgroup conflicts will predominate and simultaneously

interpersonal contradictions within subgroups will decrease. Activity of non-involved-in-subgroups people may pass from interpersonal level to microgroup one when being cooperated with each other or openly supporting some subgroup. In intensifying disintegrative group interaction with environment, levelling conflicts between subgroups and interpersonal conflicts between "self-dependent" members occurs. In case of enduring and increasing external group disintegration and regular ineffectiveness of its activity, conflictness increase between subgroups and decrease of interpersonal contradictions within subgroups will take place.

INDIVIDUAL SOCIO-PSYCHOLOGICAL STATUS

Group structure and individual status. Socio-psychological status (for instance, sociometric status, informal leadership–guidance) of the same individuals will differ in various structural group components. Subgroup members pertaining to one level of some status in their subgroup often do not have the same level in other subgroups or among "self-dependent" group members. The same applies for non-involved-in-subgroups members.

A group member should be treated as a high-status member in the group as a whole, provided he is perceived as such by a majority of subgroup members, but not only by representatives of his subgroup and/or by non-involved-in-subgroups members.

Common group informal leaders coordinate relations between subgroups, between subgroup representatives and members non-involved in subgroups. Common group leader involved in some subgroup potentially experiences much stronger support for fulfilling his functions and more often will tend to realize, first of all, interests of his subgroup members compared to a common group leader non-involved in a subgroup. *Subgroup leaders* define activity orientation of their subgroups.

External subgroup interaction and informal leadership. In case of indifferent interaction or integrative content between subgroups with similar statuses, subgroup representatives rather than "self-dependent" members will become group leaders. In case of disintegrative interaction between subgroups with a similar status, there either will be no common group leaders or among those there will be some of "self-dependent" members.

A subgroup as a subject of informal leadership. In a small group not only a single personality acts as a subject of leadership, but also an informal subgroup does which is potentially able to realize leader's functions more effectively than a single person.

Formal leadership (Supervision). Effectiveness of group supervision does not depend so much on subordinates' attitude to a

supervisor each taken separately, but rather than on the attitude on the part of subordinates of informal subgroups to him and also on a supervisor's reliance upon some subgroup.

SOCIAL-PSYCHOLOGICAL INFLUENCE

Stable subgroup influence of its members is greater than impact of other subgroups or "self-dependent" members. "Self-dependent" group members oriented to some subgroup are more liable to its impact than to the entire group influence.

External subgroup (group) interaction and its influence. External subgroup integration is tied to weakening, and internal disintegration – to increasing effect within the subgroup.

By limiting group bonds with environment, group impact decreases and subgroup influence enhances on its members and on those "self-dependent" members who are oriented to given subgroup. By intensifying disintegrative group interaction with environment, group effect on its single representatives will rise. In case of lasting and increasing external group disintegration and regular ineffectiveness of its performance, decrease of entire group influence and increase of subgroup impact on its members will take place.

Majority and minority influence. Majority and minority influence is determined by the fact what they present themselves in the context of a socio-psychological group structure. That is, measure of their influence depends on various combinations of structured group categories in terms of which they are represented. Effectiveness of various impact factors described in the literature depends on their combinations as well.

Two minimum conditions for majority influence are as follows: (a) majority impact with a subgroup (or several subgroups) to be included into its composition will be greater than majority impact consisting only of the sum total of "self-dependent" members (provided minority is not presented by a leading subgroup), and (b) majority impact including an informal subgroup with a high psychological status will be greater than majority impact consisting of the sum total of insufficiently active subgroups and "self-dependent" members (provided minority is not presented by another leading subgroup).

Two minimum conditions of minority influence are as follows: (a) with "favorable" majority composition and similar psychological status in the group, influence of one member's opinion (minority) being a representative of a cohesive and active subgroup will be greater than an opinion of some single "self-dependent" member (minority), and (b) with "favorable" majority composition and similar psychological status in the

group, influence of an opinion of a highly-cohesive informal subgroup – minority will be greater than influence of the sum total of "self-dependent" members temporarily united in accordance with a concrete position as minority.

ADAPTATION

Group member adaptation. Individuals' adaptation within the group is accomplished by means of involvement in subgroups, if a group does not provide an opportunity for its members to satisfy individual goals, needs and psychological unity in relation to parameters significant for them. If an individual is involved in the subgroup and enjoys his membership in it, his adaptation is more complete than adaptation in the group as a whole.

The more closed subgroup to the group is, the more intensively adaptation process of a subgroup member will be accomplished through his subgroup. In the open subgroup adaptation process will take place not only through the subgroup, but through the group as a whole.

Newcomer's adaptation. Different subgroups in the group are characterized by various adaptive properties regarding a newcomer. While joining a group a newcomer is actually involved in one of the subgroups that is in large "open" for him or is not involved in any subgroup (subgroups are either "closed" or membership in them is not urgent). Specific adaptation is characteristic for those group members who tend to be simultaneously involved in several subgroups.

External group interaction and subgroup openness. Intensification of group interaction with environment fosters strengthening intergroup boundaries and concurrently openness of informal groups, but limitation of ties with environment determines closeness of informal subgroups.

CONCLUSION

Informal subgroups in small groups and some aspects of phenomena manifestations such as cohesiveness, compatibility identification, reference, contradictions, adaptation, status, and also some issues of subgroup dynamics were subject to empirical study.

The theory under consideration proposes its further development. A great deal of efforts should be applied to verify experimentally and substantiate a set of emphasized positions of microgroup theory and to formulate new positions as well. One can identify several weighty trends for carrying out further investigations:

- To find out details of psychological mechanism of establishing informal subgroups regarding motivation, comparison, categorization, and identification.

- To study carefully functions of subgroup different types, especially with respect to the group that is of primary importance for optimatization of group performance effectiveness.
- To determine impact tendencies of subgroups of various types on their members and on the group as a whole; to that it is necessary to draw attention to depth and stability of influence not only within the group boundaries, but in the broader social context.
- To study microgroup identity, microgroup reference, microgroup conflict.
- To ascertain what contradiction types, at what level of their manifestation, in what structural group components, evoke these or other tendencies of integration and disintegration processes; it is important to consider not only separate contradictions, but compositions of different contradictions as well.
- To consider in detail all noted peculiarities of integration–disintegration processes within subgroups, between subgroups, between subgroups and "self-dependent" members, between group and environment in the dynamic interrelationship of these levels of group activity.
- To verify an opportunity of applying a theory to an analysis of group phenomena that have not been examined as yet

The project of further investigation on the identified trends appears to be rather extensive without taking into account a number of particular issues. To verify some positions and solve concrete tasks one should use specially designed experiments that must be carried out with natural groups and subgroups applying at most true–to–life tasks rather than artificial ones.

Microgroup theory under consideration provides a large-scope field for further investigations of small group and we hope it will arise interest and response among specialists.

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Psychophysiology

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The study of event-related brain potentials and psychometric intelligence of twins

Event-related brain potentials and psychometric intelligence was registred in 53 pairs of twins. Recording of the event-related potentials was carried out in three variants: on classical procedure «oddball» and with actualization at the participants of motivation of aspiration to success or avoidances of failure. Diagnostics of psychometric intelligence was carried out with application of R. Cattell's test of fluide intelligence (GFT 2) and J. Raven's Progressive Matrices, for diagnostics of achievement motivation A.Mehrabian's questionnaire was used.

Actualization of motivation of avoiding of failure in conditions psychophysiological experiment is connected with reduction of amplitude of component N200 at participantss with prevalence of motivation of avoiding of failure, increase in amplitude of components N200 and P300 frontal areas of a brain at participantss with prevalence of motivation of achievement of success.

It is revealed common genetic determination of a level of psychometric intelligence and amplitude and latency endogenous components of the event-related potentials.

Key words: *event-related brain potentials, amplitude, latency, heritability, common environment, shared environment, intelligence, achievement motivation, twins.*

Record of the event-related caused potentials is a non-invasive electrophysiological research technique [8; 10]. The term «event-related potentials» use for their unit cognitive aspect from naturally caused potentials which reflect, in a greater degree, sensory processing [8; 13].

There are various theoretical models of psychometric intelligence [6], however the certain intellectual level yet does not guarantee to the individual of real achievements in educational or labour activity. Real achievements in many respects are determined by a level of motivation and, in particular, motivations of achievements. The theory of achievement motivation postulates, that at the individual the motivation of an avoidance of failure or motivation of aspiration to success can prevail or to miss the expressed motivation of achievements [2; 9], also the degree of

comprehension of achievement motivation with the individual can differ [20]. H.Hekhauzen for the first time has offered «addition» model, explaining a relation of an intellectual level and achievement motivation [9].

Behavioral genetics investigations of intelligence it is shown, that heritability of the general intelligence makes about 50 % and the others 50 % of variabilities on intelligence are caused by activity of factors of environment, and also interaction of factors of a heredity and environment [7; 17]. It is shown also, that latent period P300 negatively correlates with IQ, i.e. subjects with a high parameter of intelligence are characterized by reduction of the latent period [15]. At the same time there are not clear features of psychophysiological mechanisms providing interaction of intelligence and achievement motivation, for their studying in our work has been used the technique of registration of the event-related potentials.

It is known, that twins method in its classical variant (comparison of intrapair correlations monozygotic (MZ) and unisex dizygotic (DZ) twins) allows to gain an estimation of components variances of studied attributes [14].

The purpose of the given research consisted in definition a genotype-heritability of determination phenotype variabilities of parameters of psychometric intelligence, and also an estimation of a degree of a generality of genetic determination of amplitude and latency of event-related brain potentials and parameters of psychometric intelligence depending on actualization of motivation of achievements at participantss.

The primary tasks of the given work were:

1. To reveal zone differences in brain activity depending on actualization at the participants during experiment of motivation of aspiration to success or avoidances of failure.
2. To define quantity of genetic correlations between a level of psychometric intelligence and its separate abilities and parameters of event-related potentials.

In our work in conditions of psychophysiological experiment three situations have been simulated: a situation of the decision cognitive task connected with recognition of significant acoustical stimulus; a situation in which alongside with the decision of a former task at participantss staticized motivation of aspiration to success; a situation in which at participantss staticized motivation of avoiding of failure.

53 pairs of twins have shared in our investigation, from them 27 monozygotic pairs (MZ) and 16 unisex dizygotic pairs (DZ), 10 pairs heterosexual dizygotic twins. An age of 8-27 years. A male - 28, female-78. All participants are practically healthy, signed the voluntary consent to

participation in work, right-handed persons, with normal hearing. For twins zygosity definition was used the method polysymptom similarities was used [18]; pairs with not clear diagnostics in research did not join.

Record EEG was spent under the international standard 10x20; for recording cerebral waves we used 21 electrode (Fp1, Fp2, Fpz, F3, F4, Fz, F7, F8, C3, C4, Cz, P3, P4, Pz, T3, T4, T5, T6, O1, O2, Oz), under the plan monopolar with the carried reviewer, (electroencephalograph «Encefalan», the version "Elite" manufactures by "Medicom" Russia) was used. Recording was carried out in the isolated room. EEG electrode impedances were maintained < 10 kΩ.

During examination of the event-related brain potentials three assays were carried out. In the first assay (oddball) it was necessary for participants to react to significant sound stimulus (stimulus-purpose), allowing the motor answer (to press the button). Significant stimulus - duration of tone 50 мс, power of tone - 80 Db, frequency of filling-2000 Hz. Probability of presentation of significant stimulus-20 %. Insignificant stimulus - duration of tone 50 mc, power of tone - 80 Db, frequency of filling-1000 Hz. Probability of presentation of insignificant stimulus-80 %. Significant and insignificant stimulus moved binaurally, in the casual order for prophylaxis of a monotonia. Duration of a pause between stimulus - 1000 mc.

In the second assay (AS) before recording of the event-related potentials, the experimenter gave the instruction on actualization at the participants of motivation of achievement of success (the material compensation). Further record of the event-related potentials transited as well as in the first case.

In the third assay (AF) before recording of the event-related potentials, the experimenter gave the instruction on actualization of motivation of an avoidance of failure (threat of shock by a current in case of fulfilment by the participants of an error during recognition of significant and insignificant stimulus). Further record of the event-related potentials transited on a procedure of recording «oddball».

For tracking and suppression of artefacts were used registration EMG, vertical EOG, electrocardiograms, after a filtration in a range of 0,5-70 Hz event-related potentials were averaged. In total in each test carried out 20-30 averagings. The quantity amount of averagings in three tests for each participant was identical. The event-related potentials on significant and insignificant stimulus were separately averaged. The epoch of the analysis made 1000 mc. Amplitude of the event-related potentials measured from a zero line.

Definition of achievement motivation of twins was carried out with

application of a questionnaire of A.Mehrabian [1]. For definition of a level of psychometric intelligence were used: test J. Raven (5 series on 12 tasks) and «Test of Fluide Intelligence» by R.Cattell (GFT 2) [19].

Program STATISTICA 6 was applied to statistical processing. For an estimation of heritability and environmental influences it was used Ignatyev's heritabilities factor, the estimation of genetic correlations of investigated attributes also was made [7].

After recording the event-related potentials the analysis of the average value of amplitude and latency performances of P300 and N200 on all abductions for assays of test «oddball», a variant with actualization of motivation of aspiration to success and a variant with actualization of motivation of an avoidance of failure has been lead.

At actualization of motivation of avoiding of failure at the participants having a high level of development of achievement motivation, the increase in absolute amplitude of component P300 in frontal and temporal assignments was observed: Fp2, F3, F4, F8, T5, thus the amplitude of component N200 in assignments F4, Cz increased. Actualization of motivation of aspiration to success at the same participants is connected to increase in the latent period of component P300 in back – temporal right assignment T6 (tables 1, 2, 3). In tables characteristics of the event-related potentials for those assignment in which significant distinctions in tests AS or AF in comparison about the breakdown have been received, lead on a technique "oddball" are resulted.

Actualization of motivation of avoiding of failure at the examinees having a low level of development of motivation of achievement, is connected to reduction of amplitude of component N200 in frontal assignments: Fp1, Fp2, F3, Fz, F4, F8 (table 2).

Actualization of motivation of avoiding of failure at the participants having not expressed motivation of achievement, is connected to reduction of the latent period of component N200 in assignment Oz, actualization of motivation of aspiration to success - with reduction latency of component P300 in assignment O2 (table 3).

Thus, at actualization of motivation of avoiding of failure at participants with registered motivation of aspiration to success the increase in amplitude of positive potential P300 and negative N200 in frontal assignments, and at examinees with registered motivation of avoiding of failure - decrease in amplitude of negative component N200 also in face-to-face assignments was observed. As a whole actualization at participants of motivation of avoiding of failure (a negative reinforcement) has caused the big reactance of endogenous components of the event-related potentials, than actualization of motivation of aspiration to success (a positive

Table 1

The average values of absolute amplitudes of component P300 (* – *p* < 0,05, ** – *p* < 0,001)

Assign-ment	Expressiveness of motivation of achievement according to A. Mehrabian's questionnaire								
	Aspiration to success			Avoiding of failure			Not expressed motivation		
	Oddball	AS	AF	Oddball	AS	AF	Oddball	AS	AF
Fp2-A2	4,85 ± 0,52	6,1 ± 0,51	7,7** ± 0,98	8,1 ± 0,98	7,22 ± 0,81	7,17 ± 0,8	7,05 ± 0,8	6,82 ± 0,7	7,7 ± 1
F3-A1	6,46 ± 0,64	7,1 ± 0,81	9,75* ± 1,4	9,61 ± 1,2	10 ± 1,2	8,68 ± 1	9,4 ± 0,93	8,17 ± 0,6	9,5 ± 1,4
F4-A2	6,44 ± 0,64	8,31 ± 0,98	10,3* ± 1,4	10,4 ± 1,3	10 ± 1	9,65 ± 1,6	10,15 ± 1,1	8,76 ± 0,7	9,69 ± 0,2
F8-A2	5,37 ± 0,51	5,48 ± 0,65	7,7* ± 0,85	7,16 ± 0,9	7,87 ± 0,83	6,86 ± 0,8	6,77 ± 0,67	6,53 ± 0,6	6,6 ± 0,95
T5-A1	5,05 ± 0,38	4,81 ± 0,63	6,71* ± 0,7	7,52 ± 0,7	7,99 ± 0,86	8,51 ± 1	7,65 ± 0,75	8,66 ± 0,8	8,21 ± 1,2

The average values of absolute amplitudes of component N200 (* – *p* < 0,05, ** – *p* < 0,001)

Table 2

Assign-ment	Expressiveness of motivation of achievement according to A. Mehrabian's questionnaire								
	Aspiration to success			Avoiding of failure			Not expressed motivation		
	Oddball	AS	AF	Oddball	AS	AF	Oddball	AS	AF
Fp1-A1	−5,36 ± 0,67	−5,95 ± 0,68	−6,89 ± 1,13	−9,21 ± 1,17	−8,63 ± 1,3	−6,1** ± 0,9	−6,82 ± 0,63	−7,13 ± 0,75	−6,95 ± 0,8
Fp2-A2	−5,67 ± 0,62	−4,74 ± 0,54	−7,15 ± 0,88	−8,76 ± 1,1	−6,99 ± 0,9	−6,47* ± 0,9	−6,03 ± 0,6	−6,63 ± 0,85	−7,68 ± 0,9
F3-A1	−6,65 ± 0,73	−5,87 ± 0,57	−9,6 ± 1,64	−11,6 ± 1,5	−10 ± 1,63	−6,74** ± 0,8	−8,65 ± 0,94	−9,61 ± 1,13	−9,65 ± 0,9
Fz-A1	−7,2 ± 0,68	−7 ± 0,58	−9,67 ± 1,45	−12,5 ± 1,3	−10,8 ± 1,53	−7,6** ± 0,99	−9,79 ± 1,07	−10,1 ± 1,08	−11,8 ± 1,6
F4-A2	−6,1 ± 0,49	−6,12 ± 0,58	−8,32 ± 1*	−12,8 ± 1,3	−9,94 ± 1,35	−8,28** ± 0,98	−9,44 ± 1,03	−9,56 ± 0,9	−10,9 ± 1,4
F8-A2	−5,09 ± 0,74	−5,28 ± 0,72	−6,61 ± 0,75	−9,12 ± 1,1	−7,06 ± 0,97	−6,22* ± 0,89	−6,22 ± 0,65	−5,92 ± 0,56	−7,66 ± 0,8
Cz-A2	−5,74 ± 0,74	−7,74 ± 0,79	−9,13** ± 1	−10,9 ± 1,4	−10,1 ± 1,52	−10,1 ± 1,35	−8,82 ± 0,85	−9,81 ± 0,96	−11,7 ± 1,3

The average values of time characteristics (the latent period) component P300

(* – *p* < 0,05, ** – *p* < 0,001)

Table 3

Assign-ment	Expressiveness of motivation of achievement according to A. Mehrabian's questionnaire								
	Aspiration to success			Avoiding of failure			Not expressed motivation		
	Oddball	AS	AF	Oddball	AS	AF	Oddball	AS	AF
T6-A2	367 ± 12,35	422* ± 21,9	394 ± 24,32	405 ± 21,06	431 ± 20,42	398 ± 19,06	407 ± 18,18	390 ± 13,14	394 ± 15,42
O2-A2	414 ± 31,16	423 ± 22,29	394 ± 26,03	407 ± 21,47	404 ± 21,47	383 ± 19,95	431 ± 18,59	383* ± 14,75	393 ± 16,63

reinforcement). At people with prevalence of motivation of aspiration to success possible application in experimental conditions of a negative reinforcement is connected to increase in absolute amplitudes of component P300 in the frontal and central assignments. It can be interpreted in such a manner that in similar conditions intensity of excitation of the brain zones involved for the decision of cognitive task increases. It is known, that at reaction to relevant stimulus the amplitude of component P300 is higher, than on irrelevant [8]. People to prevalence of motivation of avoiding of failure in a similar situation have reduction of amplitude of component N200 in frontal and central assignments that can be regarded as reduction of intensity perceptive synthesis. Amplitude and latency of component N200 are connected to a phase of an identification of stimulus, amplitude and latency of component P300 are connected to a phase of decision-making [8].

At the same time it is necessary to note, that at participants with prevalence of motivation of avoiding of failure the amplitude of components N200 and P300 is higher in all three tests, than at at whom the motivation of aspiration to success prevails. Thus, even before actualization at them motivation of achievements in experiment, in the first test at people with prevalence motivation avoiding of failure were higher than value of absolute amplitudes, than at people with the expressed motivation of aspiration to success.

Comparison of characteristics endogenous components of the event-related potentials with use of the statistical criterion Freedman, received for three tests, has allowed to reveal significant distinctions between the average values of amplitude characteristics of component N200 in assignment T4 ($p < 0.05$) and Oz ($p < 0.05$), and on latency - in assignment F7 ($p < 0.01$) and P3 ($p < 0.05$).

In assignment Cz of distinction between the average values of amplitude characteristics of component P300, received for three tests, come nearer to a significance value ($p < 0.09$). On latency P300 significant distinctions for assignments T4 ($p < 0.01$) both Oz and Cz ($p < 0.05$) are received.

Under J. Raven's test the share of a genetic component in phenotypical varies variabilities for various subtests from 0 up to 0,72. At an estimation of intrapair similarity on intelligence high heritability of series D of Raven's test has been found out (table 4). The given series is made according to a principle of a reorganization / regrouping of figures in a matrix; the decision demands to track natural sequence of figures and alternation of figures in complete structure. Thus, it is possible to assume, that abilities to catch quantitative and qualitative changes have inherited character. A series B has high enough degree of inheritance, which assumes

a presence of analogy between two pairs figures, that allows to speak about inheritance of ability of linear differentiation and conclusion on the basis of linear interrelations. As a whole IQ on Raven's test it is determined by environmental factors. Apparently from table 3, series A and C also have a genetic component of a dispersion though it is low expressed.

Table 4

Estimation of MZ and DZ intrapair similarity, contribution genetic (h ²), common environment (c ²) and shared environment (e ²) components in phenotypical dispersion under Raven's test (* p <0.05, ** p <0.01)

Raven's test	rMZ*	rDZ	h^2	c^2	e^2
Series A	0.35	0.27	0.16	0.19	0.65
Series B	0.59*	0.23	(0.59)	0	(0.41)
Series C	0.53*	0.44	0.18	0.35	0.47
Series D	0.72*	0.4	0.64	0.08	0.28
Series E	0.07	0.59*	0	-	-
IQ	0.79**	0.79**	0	0.79	0.21

*Designations: rMZ - correlation monozygotic twins; rDZ - correlation dizygotic twins.

Further for an estimation of structure of genetic connections, characteristic for psychometric intelligence (appreciated with application of Raven's and Cattell's tests) and amplitudes and латентности components P300 and N200 have been made calculation of genetic correlations.

In tables 5 and 6 values of genetic correlations between parameters of psychometric intelligence under R. Cattell's and Raven's tests and amplitude and latency components of event-related brain potentials.

The analysis of table 5 shows, that at a genetic level intelligence under Raven's test correlates (especially, the mental faculties diagnosed by tasks of series A, B, C) with amplitude of component N200. At actualization of motivation of avoiding of failure value of genetic correlation of Raven's test (it is especial, series A, B, C) and latency of component P300. For series E of Raven's test at actualization of motivation of aspiration to success in experimental conditions high direct genetic correlations with amplitude and latency component P300 and high negative (return) correlation with amplitude of component N200 are found out.

Table 5

Genetic correlations between psychometric intelligence (Raven's test) and amplitude and latency components of event-related brain potentials

| | | *Series of Raven's test* | | | | | | |
		A	*B*	*C*	*D*	*E*	*Total*	*IQ*
«Odd-ball»	P300 amp.	-0,5	-0,57	-0,51	-0,5	-0,31	-0,35	-0,29
	P300 lat.	-0,56	0,29	-0,05	0,34	-0,51	-0,04	-0,05
	N200 amp.	0,88	0,65	0,71	0,36	0,2	0,44	0,39
	N200 lat.	-0,66	-0,1	-0,31	-0,03	-0,88	-0,22	-0,22
AS	P300 amp.	0,31	-0,06	0,06	-0,04	0,95	0,09	0,2
	P300 lat.	0,06	0,82	0,46	-0,12	0,74	0,27	0,26
	N200 amp.	-0,47	0,02	-0,03	-	-0,91	-0,15	-0,25
	N200 лат.	-0,59	0,52	0,11	-0,19	-0,53	0,17	0,18
AF	P300 amp.	-0,06	-0,35	-0,17	-0,2	-0,64	0,02	0,04
	P300 lat.	0,94	0,65	0,77	0,32	0,25	0,98	0,91
	N200 amp.	-0,28	-0,27	-0,1	-0,21	-0,86	-0,3	-0,34
	N200 lat.	0,4	0,99	0,59	-0,13	0,37	0,34	0,41

At actualization of motivation of avoiding of failure negative high genetic connection between amplitude of component N200 and results of participants typed in series E of Raven's test is found out. In test "oddball" results on series E have high negative genetic correlation with latency by component N200.

Taking into account, that tasks of series A, B and C by Raven's test reveal ability to differentiation of basic elements of structure and disclosing of connections between them, and to its checking with the submitted samples, ability to an establishment of analogy by gradual differentiation of elements, ability to catch difficult changes of figures according to a principle of their continuous development, enrichment on a vertical and a horizontal, it is possible to conclude identification of a missing part of structure, that the given abilities at a genetic level are supervised generally by the same genes which determine amplitude of component N200. At actualization of motivation of avoiding of failure value of genetic correlation under the given subtests with latency of component P300 grows. Tasks of series E of Raven's test allow to estimate analitic-synthetic power of thinking. According to the received data, in many respects the same genes which promote increase in parameters of analitic-synthetic abilities, reduce latency of component N200.

The analysis of table 6 shows presence positive genetic correlation between a parameter of psychometric intelligence under R.Kettell's test and amplitude of component P300 in test AF (0,31), and also amplitude of component N200 in the first test (0,71) and amplitude of component N200 in test AS (0,5). Thus, there is a general genetic determination as level IQ diagnosed under R.Kettell's test, and amplitude characteristics of component P300 in test with actualization of motivation of avoiding of failure.

Table 6

Genetic correlations between psychometric intelligence (R.Kettell's test) and amplitude and latency components of event-related brain potentials

Tests		«Series»	«Classi-fications»	«Mat-rices»	«Condi-tions»	Total	IQ
		Subtests of R.Kettell's test					
«Odd-ball»	P300 amp.	-0,57	-0,71	-0,35	-0,75	-0,67	-0,62
	P300 lat.	-0,3	0,28	0,23	0,15	0,08	-0,06
	N200 amp.	0,87	0,91	0,7	0,82	0,69	0,71
	N200 lat.	-0,81	-0,65	-0,19	-0,16	-0,19	-0,38
AS	P300 амп.	-0,55	-0,61	-0,62	-0,86	-0,5	-0,42
	P300 lat.	-0,41	-0,22	-0,32	-0,14	0,1	0,09
	N200 amp.	0,62	0,73	0,45	0,85	0,73	0,5
	N200 lat.	-0,71	-0,2	0,01	-0,48	-0,27	-0,29
AF	P300 amp.	0,53	-0,26	0,57	-0,22	0,22	0,31
	P300 lat.	-0,48	-0,09	-0,23	-0,32	-0,48	-0,26
	N200 amp.	-0,8	-0,26	-0,74	0,24	-0,35	-0,39
	N200 lat.	-0,37	-0,18	-0,27	-0,5	-0,78	-0,87

Negative genetic correlations between a level psychometric IQ by Cattell's test and latency of component N200 (-0,38) (and value of negative genetic correlation grows at actualization of motivation of avoiding of failure (0,87)), and also amplitude of component P300 both in test "oddball" (-0,62), and at actualization at examinees of motivation of aspiration to success (-0,42). 38 % of the common genes adjust as growth of a level psychometric IQ by R.Kettell's test, and reduction latency of component N200, especially are established, at actualization of motivation of avoiding of failure (in this case the estimation of a generality of genetic determination of both parameters increases up to 87 %). Reduction of amplitude of component P300 in test oddball and increase psychometric IQ

by R.Kettell's test 62 % of the common genes, in conditions of actualization of motivation of aspiration to success - 42 % of common genes are determined, and in conditions of actualization of motivation of avoiding of failure genetic correlation changes a sign on positive.

Genetic correlations of separate subtests by R.Kettell's test with characteristics of components of event-related brain potentials, submitted in table 6, testify that the maximal value of genetic correlations of all four subtests was observed with amplitude of component N200 in test "oddball" (0,7-0,91) and at actualization at examinees of motivation of aspiration to success (0,45-0,85).

For amplitude of component P300 the expressed negative genetic correlations with efficiency of the decision participants of all four subtests as for test oddball (-0,35 - (-0,75)), and for conditions with actualization of motivation of aspiration to success (-0,55-(-0,86)) were observed. Actualization in experimental conditions motivation of avoiding of failure differently influences genetic correlations with amplitude of component P300 of different subtests of R.Kettell's test: for subtests 2 ("Classifications") and 4 ("Conditions") value of genetic correlation remains negative, but essentially decreases on absolute size (from 71 % up to 26 % for the subtest 2 and from 75 % up to 22 % for the subtest 4); and for the subtest 1 ("Series") and the subtest 3 ("Matrices") genetic correlation changes a sign on positive and accepts rather high values (53 % for 1 subtest and 57 % for 3 subtests).

As a whole under R.Kettell's and Raven's tests the analysis of genetic correlations with characteristics of components of event-related brain potentials has shown, that there is a general genetic determination both psychometric intelligence, and amplitudes of component N200, the quantity of the common genes participating in determination of these parameters changes from 39 up to 71 %.

There are distinctions in genetic determination of amplitude and latency of components of event-related brain potentials and level IQ under under R.Kettell's and Raven's tests. For Raven's test at transition from test oddball to conditions of actualization of motivation of avoiding of failure the share of the common genetic determination with latency of component P300 and N200 increases, and for R.Kettell's test genetic correlation in both cases has negative value. I.e. one common genes determine as increase in parameters IQ under Raven's tests, and increase latency of components P300 and N200, and other common genes determine as increase in parameters IQ under R.Kettell's test, and reduction latency of components P300 and N200.

Success of cognitive activity is determined not only resources of the subject with which he can involve for its realization, but also and substantially by an anticipation of an end result, image of "success" or "failure" which develops at the subject and determines his motivational strategy.

The analysis of the average values of amplitude and latency characteristics by endogenous components of the event-related potentials has shown, that at participants with prevalence of motivation of avoiding of failure the amplitude of components P300 and N200 is higher, than at participants with prevalence of motivation of aspiration to success. It can be connected by that «avoiding failures» it is required to show the big intensity of the nervous answer for the decision cognitive tasks, than «aspiring to success». Actualization at participants of motivation of avoiding of failure promotes the greater reactance of parameters endogenous components of the event-related potentials, than actualization of motivation of aspiration to success. At people with prevalence of motivation of aspiration to success in the event that in experiment the motivation of avoiding of failure was staticized, the increase in amplitude of component P300 in the frontal and central assignments was observed. At people with motivation of avoiding of failure in the same experimental conditions the amplitude of component N200 in the frontal and central assignments decreased. It is possible to assume, that people, with prevailing motivation of aspiration to success in stressful conditions (what, undoubtedly, the conditions menacing with impact by a current) were intensified the cognitive activity. In the same conditions people with prevalence of motivation of avoiding of failure reduced the touch synthesis connected with cognitive task, being afraid of impact by a current.

It agrees to the data received Carrillo-de-la-Peña M.T. and Cadaveira F., introduction of the additional motivating instruction promotes increase in amplitude of component P300 and its reduction of latency [4]. In E.A.Kostandov's works it has been shown, that actualization during experiment of additional motivation at the individual, conterminous with actual for him in vital conditions, promotes "simplification" of formation of wave P300 (reduction by the latent period and to increase in amplitude) [13].

Donchin E., Coles M.G.H. consider, that P300 reflects the nervous activity reflecting change of representation [5]. Latency P300 then corresponds to speed of cognitive processings, and the amplitude shows accommodation of brain power resources [12]. Amplitude P300 also depends on expectation of stimulus, from relevance of a task [21], from

selectivity of attention [11] and from an emotional reinforcement and motivation [4].

The positive genetic correlation found out by us between efficiency of the decision of subtests 1-4 by R.Kettell's tests and amplitude of component N200 testifies that there is a genetic generality in maintenance as growth of intellectual efficiency in the decision of intellectual tasks on addition, exception superfluous, detection of laws to various attributes, the analysis of spatial - topological laws, and intensifications of process of touch synthesis of the information.

Negative genetic correlations between efficiency of the decision of subtests 1-4 by R.Kettell's tests and amplitude of component P300 can be explained if to take into account, that the given component is connected to decision-making and, hence, it is possible to tell, that the common genes determine growth of intellectual efficiency and reduction of amplitude of component P300.

Despite of seeming external similarity of stimulus a material of both tests (R.Kettell's and J.Raven's), including the nonverbal tasks, the found out distinctions in a generality of genetic determination of level IQ by two techniques and parameters of amplitude and latency of event-related brain potentials can be explained by heterogeneity of structure of both tests and nonidentity of mental faculties diagnosed by the given tests. So, subtest E of Raven's test (analitic capasity) has other structure of genetic correlations with characteristics of components of event-related potentials, rather than subtests А, В, С, Д.

Creation in our experiment psychophysiological model by achievement motivation action on the decision of partisipant's of cognitive tasks of distinction of significant and insignificant stimulus has shown, that actualization of achievement motivation of promotes changes in an estimation of a generality of the genetic determination determining both parameters of psychometric intelligence, and parameters by endogenous components of the event-related potentials. It agrees to the data of genetic psychophysiology, action of stress promotes expression of the certain sites of genotype [17]. The received data can find an explanation within the framework of the concept about stress, as about the internal mechanism of regulation of hereditary variability and evolutionary process. According to the given concept confirmed with a number of experimental data, action of stress promotes change and integration of activity of functional systems of an organism on genic, endocrin, nervous and mental levels [3]. It can be caused by influence of hormones of a bark of adrenal glands (corticosteroid complex), and also steroids on activity genes [16]. The stress affects by genotyp's activity by means of neiroendocrin regulation.

In an experimental research the psychophysiological model reflecting interrelation of intelligence and achievement motivation has been constructed. Application twins method has allowed to reveal components of phenotypical dispersions of intelligence, and also to make an estimation of a degree of a generality of genetic determination amplitude and latency of event-related brain potentials and parameters of psychometric intelligence depending on actualization of motivation of achievements at partisipants.

The revealed high heritability of separate subtests of Raven's test (series B and D) testifies that abilities to catch quantitative and qualitative changes, and also abilities of linear differentiation and conclusion on the basis of linear interrelations are highly is hereditary caused.

Estimations of the common genetic determination both psychometric intelligence are received, and amplitudes of component N200, the quantity of the common genes participating in determination of these parameters is estimated in limits from 39 up to 71 %.

Actualization of motivation of avoiding of failure in experimental conditions is connected to reduction of amplitude of component N200 at partisipants with prevalence of motivation of avoiding of failure, increase in amplitude of components N200 and P300 in frontal areas of a brain at partisipants with prevalence of motivation of achievement of success.

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Cognitive Psychology

Abakumova I.V., Makarova E.A.

Learning and teaching process content as semiotic heterogeneous text: schema and background interaction

During recent decades cognitive and meaning components of consciousness have been analyzed rather discretely, but in a number of home researches the possibility of introaction of these approaches was shown (Agafonov A., Petrenko V.). Comparison of methodological foundations of cognitive science and Leontiev's home disciples shows their similarity, especially as connected with comprehension of culture text components, with the idea of categorizing role of language in conscious structuring and human being existence. Schema as the pattern of psychological construct synthesizing cognition and meaning in united architecture of individual consciousness, in a single subjective semantic space, allows to see didactic values of adopting teaching material by a student as semiotic heterogeneous text. Schema synchronizing outer and inner fields of a student produces a universal scaffolding defining the margins of all the psychic contours, that is intentions of meaning building, consciousness and self – consciousness development.

Key words: personal meaning constructs, meaning building, integral meaning regulation, meaning-centered approaches in didactics, semiotics, text, context, schema, types of schema, schema characteristics, cognitive models, information approach, introaction, teaching process goals, representation of teaching process contents, operationalization.

Content of the process of comprehensive learning takes an important place in its general structure. All the facts within the teaching and learning process can be interpreted to a certain extent as transformed content shapes. Teaching process content defined by educational goal as system forming factor, is implemented in all the other components of teaching process, such as a teacher and students dialog is considered not simply as educational technology in teaching theory and pedagogic psychology, but as a dialog of contents, project is qualified as teaching technology (project method), i.e. as a way to acquire a certain fragment of content. However,

meanwhile the method itself is acquired and is considered as learning process content.

Changes in the content cause other spheres and parameters of education changes. The source of many innovations, characteristic for current teaching process can be found in content, and it is fair that initial point of coming transfer to 12-year education is the new content.

What do we understand by educational process content? In traditional didactics it was defined as something that should be acquires: knowledge and skills. Such notion was supported by psychology, first of all, its cognitive branch.

Even within the frames of psychological concepts of developing education (Davydov V.V.) it was interpreted the same way. In such understanding of content there is a certain sense. Knowledge, for example, can be considered as the way of a person's behavior. At the same time they have a different character as concerning a human being, as they are the main structural units of content in cognitive paradigms of education and can not reveal all the peculiarities of human existence. Under conditions of humanistic tendencies of society, considering human personality and individuality the main value, the quality of such content can not be evaluated as high.

Current understanding of educational process content should be taken out of its priorities as they are defined in the humanistic pedagogy and implemented to a different extent in educational systems. Turning to goals as determining factor we used a well-known classical statement that the goal usually defines the activity character. After we figured out our general pedagogical goal, we immediately define content as it is understood as special phenomenon of educational process.

Psychologists and teachers consider that modern education strategy is directed to a child's development, as it is the main condition of human life. Humanization of education, its orientation to personal are considered the most actual for modern society tendencies. In different didactic models with orientation to initiation of personal, such as "personally oriented" (Serikov V., Yakimanskaya I.), "personally active" (Zimnaya I.), "personalized" (Bespalko V.), "developing" (Davidiv V., Elkonin D., Zaporozhec A.), "innovative" (Lyaudis V.), "humanistic, childhood centered" (Orlov A.), "meaning didactics" (Abakumova I., Ermakov P., Fomenko V.), with all their variety based on traditional education critics and having transfer from "adaptive-disciplinal model of unifies education to person oriented children centered model of variant education" as their goals (Asmolov A.); the person integrity and individual trajectory of life,

psychological safety of all participants in educational interaction are valued.

The global aim of the teaching process as a central part of education is personal and spiritual development of a learner. In the terms of psychology development means new psychic formations, subjectivity development, self-development of inner, natural, universal qualities of a person, shaping of his life concept components, and integral meaning orientation of a person. In the theory of self-developing systems it looks as regulation, harmonization chaotic human states, integration of a number of random features and relations. Naturally, axiology sees its own meanings in development interpreting it as formation the value system of a person. In phenomenology development is considered as getting out the limits of own "I".

In the terms of semiotics development means a different thing – it is a transition of an individual from one sign system to another, and in this approach to development there is something that psychological perception of development lacks. It is this initial methodological construct that directly leads us into the text topic, as in the semiotics the text is defined as a unit of culture, and as it is well-known the unit bears all the features of the whole. Consequently, if we declare culture as initial basis for educational process and the beginning of semantic shaping of learners' activity, so we can do the same to the text as its "cell", its structure which possesses all the features of this same culture, also having meaningful nature.

If teaching process in the unity of its components (goals, content and ways of their operationalizing) is in the centre of culture and is its mechanism of transfer from the past to the future, and the culture itself has "porous" text structure, the unity will become a mechanism of texts translation. Moreover, as education and its main method which is teaching, is special form of culture in the sense that it is compressed to the minimum and structured in a certain way, the whole of the educational process, but not only its content can be understood as complicated, multistructural text in its dynamics of revitalizing and development.

Thus, essential components (sign structure) and ideal structure are found in the text. However, only approximately we can say that the text ideal side is presented by information. Information correlates with the real existence, its forms, processes, features, but the text has "information" of a different kind. The text on the one hand bears the image of the outside world; on the other hand, it bears the image of a man, who has created the text about this world, his attitudes to it called personal semantics. Philosophers characterize the text as "the spirit imprisoned by signs". "Semantics of the meaning consists in what directs existence". The

personality of the author is given to us as meaningfully important structure and as phenomena of the same order with the essence of a human being" [8].

Semantic field of the leaner consciousness has its particular primary architecture, formed under the influence of meaning actualization degree, its verbalization degree, the level of semantic "vertical line" formation (from personal meaning to life perception strategies). Any problem understanding initiation, learning problems as well, from controlled to acknowledge is specific according to the structure of the problem; the primary semantic pattern is activated as a response to this schematic anticipation. The idea was first expressed within the frames of cognitive psychology, however not in the information models (Simon G., Anderson G.), where the attempt was taken to describe the mechanism of text comprehension as the whole representation of the situation and operations over this representation, but not in the connectionists models considering information processing and denying substantionality of elements representing these or other pieces of knowledge (knowledge is kept by the whole net as a whole on the interaction of elements level), cognitive and semantic contours were not correlated.

Closer to this problem was Piaget in genetic epistemology notwithstanding some difficulties in the number of empiric facts explanation. For the problem of comprehension in the teaching process, accepting the text as perception context, the notion of schema introduced by Piaget in connection with sensor-motor intellect is rather valuable.

In this connection schema was considered as a mechanism of producing similar actions, but not as rigidly fixed as under reactions in the form of reflexes [10]. In current researches of neo-structuralism representatives, the field of schema application is extended and includes representative intellect as well, but schema interaction is understood as defining the dynamics of cognitive processes passing. According to a number of authors, Ushakov D. in particular, in comparison to information approach the trend developing the notion of schema allows to describe phenomena of mental development more adequately [11].

How can schemas be realized in the conditions of multiple choices put in front of a learning subject? In everyday life people use certain rules or scenarios for real life interpretation. New information is processed according to how it matches these rules, called schemas as primary cognitive patterns. Such schemas can be used not only for explanation of what has already happened, but also for forecasting different situations in the future. Schema theory explains that we use schema stored in our

memory to infer what our interlocutor is going to say, based on the similar situations in the past.

The information that would not match schemas already existing in our memory can be partially understood or would not be understood at all. This is the reason why some readers spend so much time for reading comprehension, if they are not familiar with the text topic, even when the meaning of separate words is understandable.

The essence of the text reading (and in the learning process it is content) is semantic tuning, defined by the general level of personal development and semantic actualization. And it is semantic tuning that defines text as a whole, gives it specific sound value and in general its outer shape. Consequently, we can say that it fulfills the role of the so called "inner shape" of the language, defining peculiarities of emerging psycho-semantic image.

When a person performs the role of a listener the word actualizes tuning, shaped as a result of multiple influences of the same word in the past. On the basis of this tuning a person has a corresponding psychic content which he recognizes as the word meaning. It means that the word is understood. The word is always individual as it is realized by the tuning.

This concerns not only foreign languages, but native language as well. The same is true about listening comprehension. If the topic of the conversation is familiar to both speakers the understanding is achieved even if not all the words are audible or understood. In case when the topic is not familiar to one of the speaking partners, even familiar words in unfamiliar context can cause miscommunication or there will be no communication at all.

Before we consider how to practically use schema as the basis for different learner's hierarchies in education, it is necessary to give definition of the terms comprising units and elements used in schema description.

Schema (schemata) is a unit used in schema theory defining generic knowledge, generalized descriptions, plans or cognitive structures systems, which are stored in memory, i.e. abstract representations about events, things or relations in the world. Schema theory suggests the picture as it is organized in human memory in the form of generalized knowledge. It states that this knowledge is organized into mental structures called schemas. "As long as people are learning they build knowledge, creating new schemas or binding together already existing schemas, but in a new combination" (Anderson) [3, p. 54].

Background knowledge is also an important concept in the system of theory scheme, as it defines generalized knowledge of the world which has been acquired by a learner. New experience is usually compared to the one

already existing in the memory; it helps understand what is going on. Understanding is a united function of the text aspect of student's knowledge where text features and student's knowledge exist on the same level of abstractiveness.

The main statement of the schema theory is that the majority of sense that a reader gets from the text is not in the text itself, but in a reader's memory, in his background knowledge. Whatever he understands from the text (oral or written) is the function of a certain schema which is activated during the text processing, that is reading or oral comprehension.

The process with the help of which schemas affect understanding is called reproduction or recreation. It refers to general schema representation which a reader brings into assignment when he is involved in the creative process between the schema and the given text message.

The majority of schemas which everybody has are idiosyncratic. Everyone has his, different from the others, impressions and life experience, that is why everyone forms his own point of view and opinion about the world. However, all people have generalizes knowledge, too. That is why many schemas which are formed in the individual memory are common. They compile the most important part of common cultural knowledge and form the foundation for successful communication and interaction between people.

The goal of any foreign language teaching is to acquire oral communication skills and comprehension skills in writing. When people communicate they actually refer to schemas common to all of them. For the students to be able to participate in intercultural communication, a teacher has to make sure they share the same set of schemas which can be considered as common background knowledge a priori and used for their further successful learning.

Schema is an interdisciplinary concept which can be used both in psychology, anthropology, teaching science, besides as a concept it is open, not completely shaped and can be corrected, supplemented and interpreted in different scientific fields. Researchers within the frames of different disciplines came to a conclusion that adequate description of culture symbols from word level to the level of cognitive systems require definition of major cognitive schemas behind these stimuli. Schema theory is the main scaffolding for the more complicated organizations.

But what is schema? First, schema is not a mental picture. Rather it is a cognitive structure inside which the interpretation of the world occurs. The main characteristic of schemas is the fact that they allow a certain range of possibilities.

The other characteristic is that schemas use what is called absent values – positions to be filled, even if they are not felt or completely absent, it is that feature that shapes personal meaning structures. The most important of schema features is that they can be constructed using other schemas.

Cognitive models, called schemas, are concept abstractions, stored in human mind that serve as connection between receptors of the sense organs and behavioral reactions as it was stated by Wallace.[16] These are abstractions which serve the basis for all human information processes, for example perception and comprehension, categorizing and planning, recognition and response, problem solution and decision making.

Schemas are structures and processes simultaneously. Cognitive schemas represent our conceptual knowledge. They build our knowledge of objects and situations, events, actions and their consequences. Main and invariant aspects of concepts can be represented on the higher levels in semiotic structures while variables (or slots) connected with specific elements in the outside world can be represented on the lower levels. Schema is a procedure man uses to interpret information. Cognitive schemas suggest direct connection of cultural and psychological processes.

Culture is the main source of human schemas, and schemas play central part in most psychological processes. Thus schema is a way to connect culture with other psychological processes which influence people's activity. The fact that communication and mutual understanding between people speaking different languages and belonging to different cultures is possible proves the existence of universal basis which is human life invariant and also the high degree of interpenetration and interaction of different people's cultures.

Meanwhile, the presence of "cultural relativity" of the world picture of this or that ethnos, great variety of categorization forms are conditioned by the system of meanings, including in a converted form specific vital activity and culture of a given social and national community.

The initiative of concept of schema and schematism introduction is assigned to Bartlett [4], who first mentioned it in his research of memory. Before that the word "schema" was used for reflecting the human idea about his own body or the body relations to the world.

Bartlett used the notion of schema to show how a certain organizational structure of knowledge which correlates with new knowledge and experience can be created. This very understanding of schema was introduced by Rummelhart [14].

R. Skemp explained that schemas play an important part in relative understanding functioning: "Understanding of anything means its

assimilation into an appropriate schema" [15, p. 43]. By this he explains that such an understanding of schema represents its interrelated hierarchical relationships. Out goal is to analyze such notion.

Since the term "schema" appeared, many other terms were used to describe it, including frame, scene, scenario, text, also model and theory. The key theoretical development of the schema theory was done in several areas, including linguistics, anthropology, psychology, artificial intellect. The pick of development for the schema theory was reached in the 70s. One of the main driving forces was artificial intellect development, especially attempts directed to computer reading of natural texts. It was found out that the most part of the information in an average newspaper article was impossible to understand without referring to a great amount of information not mentioned in the same article. For example, let us consider a simple text cited by D'Andrade [5]:

John wanted to do well on the exam, but his pen ran out of ink and his pencil broke. He tried to find a pencil sharpener, but there wasn't one in the room. Finally he borrowed a pen from another student. By then he was so far behind he had to rush, and the teacher took off points for poor penmanship.

In order to understand this story, it is necessary to have a complete schema of written exams in Great Britain and America. Otherwise the text itself doesn't make clear the connection between the fact that John ran out of ink and his inability to pass the exam.

The schema of the writing action is a good introduction to the idea of schema in general. Filmore contrasts "relations of text correlation" included in the English verb *to write and Japanese word kaku*. These two words are translated as synonyms, but the schemas behind them are different. Both schemas include the scene where somebody moves a pointed tool across the surface leaving a track. Such a scene involves a writer, a tool, a surface on which the marks are left and the result of such action. Neither of the schemas specifies what kind of a tool is used: it may be a pencil, a pen, a piece of chalk, a typewriter, a stick or even an airplane leaving some kind of track in the sky. The same is true for the surface: it may be a piece of paper, a board, wet sand or the sky. The result of the action may be any text from one letter of the alphabet to the huge manuscript. The only difference is that the English schema for writing considers this writing to be a text (words, numbers, and linguistic symbols). In the Japanese schema it may vary from a scrawl to a perfect picture. Thus the English writing schema is one particular kind of a wider Japanese schema of *kaku* [6].

Gestalt psychology considers system features in the study of mental organization. Gestalt ideas are used especially concerning visual perception. "Additionally, or even instead visual images there exist general types or schemas from the point of view how a subject has constructed his responses. Schema itself is becoming more and more dominating, with initial visual images disappearing, details from the original are forgotten and reproduced incorrectly, though even the last reproduction usually shows steady movement to depicting this or that type of schema, which was initially thought" [17, c. 75].

Quoting Bartlett's classical work "Remembering", the term schema refers to "active representation of the last reactions and knowledge". The word "active" was to highlight the constructive, reproducing character of remembering in contrast to passive "fixed and lifeless" memories, in other words active versus passive remembering.

Schema theory is the theory of knowledge, its representation and application. According to schema theory all knowledge is packed in certain structures which are called schemas. Besides knowledge itself there is information how this knowledge should be used. Schema is a data structure representing general notions kept in memory. There are schemas representing knowledge about all concepts, objects, situations, events, their sequence, actions and their results.

Background knowledge part in language comprehension was formalized for the first time in the schema theory. Any text, written or spoken, does not have meaning by itself. According to the schema theory it rather supplies directions for the reader or listener how to recreate or create the meaning, based on his own background knowledge. This background knowledge when structurally shaped is call schemas. According to schema theory text comprehension is an interactive process between the background knowledge of a reader (listener) and the text (oral or written). Effective comprehension requires the ability to connect text material with existing knowledge. Words, sentences and even whole texts understanding requires more than linguistic knowledge, it includes all the previous individual knowledge of the world.

Numerous examples can be found in literature. For example, researchers offered subject readers a passage that was not clearly connected with any particular situation (laundry) and was pretty difficult for understanding and interpretation. But after the hint that it was about doing laundry, the subjects with the help of the appropriate schema could easily comprehend the given text. It was interesting that most of the subjects called the passage incomprehensible, but there were some who found their own alternative schemas and interpreted the passage according to them,

very originally. The most impressive was one clerk's interpretation who found it very similar to his work and using a familiar schema described business paper circulation in the office. He was very surprised to know that it was not right. Here we had the case when a reader "understood" the text, but not the author's intention.

Bartlett claimed that the central notion in his theory was "referring to own schemas". Since then the word is used in psychology very often. It is the most neutral and general of the terms, it can be referred to any kind of knowledge. However, a usual schema is not individual knowledge, but a mosaic pieces of which correlate with each other. Schemas are systems for information and knowledge interpretation, storage and reproduction.

In this approach to schema theory it is rather important for us to consider the following ideas: cognitive schema binds human culture and psychology, interferes into human psychic and the process of socialization, and leads the human actions. Cognitive schema is unconscious means of events interpretation, it make a person see the outer world under a certain culturally determined angle and act according to his culturally determined interpretation of the current events.

When the new information does not match cognitive schemas of the person, the information can be denied or the person can reconstruct his schema so that it would better match his new knowledge. The education theory considers organizes, structured knowledge as a complicated net of abstract mental structures which represent the person's understanding of the world.

R. Anderson, however, expanded on the word notion: schema can be considered as the expectation set. Understanding occurs when these expectations are filled with the specific information, which are provided to the person's sense organs. Information that meets these expectations can be stored in memory, later the appropriate schema cell can be activated when needed. Information that does not match expectations is not coded in memory or can be distorted so as to match existing schemas. Gaps in the information can be filled later with the inference in order to coordinate it with the expectations. Later the same expectations that were used to code information can be used to reproduce and reconstruct events and facts [2, p.241].

Later, R. Anderson reformulated the notion of schema: "Every act of understanding includes knowledge about the world" [3, p.369]. Schemas interaction means either that two schemas can be addresses simultaneously solving different parts of the problem, combining the results into one problem solution. Or the two of them can be addressed at different times,

each of them processing its own part of the assignment. Except for interaction two schemas can represent absolutely different solution of the same problem, and the final decision should be made according to its appropriateness in the particular situation. Schemas can enter each other on different levels of abstractiveness.

Relations between them look like a net rather that hierarchical, due to this fact one schema can interact with many others.

From the point of view of G. Rischar, we can choose four main features of schemas. The first one is blocks of knowledge that are on the one hand, are indivisible and reproducible in the memory as they are; on the oher hand, autonomous as to the other knowledge.

The second feature is that schemas represent complex objects. It means they are constructed out of their own elements, i.e. concepts, actions and relations or out of more generic schemas.

The third feature is that schemas are generic and abstract structures applicable to a different number of situations. Consequently, schemas consist a number of variables or slots designed to be filled with specific elements of the situation presented by the given schema. Some schemas are relatively specific (they are called scripts), others, such as schemas describing the structure of some story – climax, evaluation, moral, and they are relatively typical.

The fourth feature is that schemas express declared knowledge connected not with particular application, but those which can be used for different purposes: understanding, implementation, and conclusion. This happens because they describe the part-whole organization [13].

Schema as a pattern of psychological construct synthesizing cognitive and semantic into united architecture of individual consciousness, allows to see didactic angle of the student's acquiring of the teaching and learning content as semiotically heterogeneous text. Schema, synchronizing the outer and inner fields of a learning subject, becomes a universal scaffolding defining all the psychic contour limits, thus intentions for consciousness and self-consciousness development. "Any world is able to understand another, so to expand its own image of this world" (Bakhtin M.)

Teaching curriculum content as semantic field of "crystallized" values of acquired culture and the student's consciousness as semantic substance are correlated due to emerging correspondence of schemas set in texts to be comprehended and in the individual student's consciousness, and this provides cross-section of "semantic fields" and "culture dialog" of a learner and learnt, curriculum content and student's personality.

During the last decades cognitive and semantic components of consciousness were analyzed rather discretely, but in a number of home

researches the possibility of interaction of these approaches is shown (Agafonov V., Petrenko). Comparison of methodological foundations of cognitivism and domestic disciples of Leontiev A. shows their similarity, especially in problems connected with text components of culture with the idea of the language role in structuring of consciousness and human existence.

According to Leontiev, the substrate of consciousness is the system of its meanings given in the unity with personal meanings and senses. Meanings are converted form of activity. "In the conception of Leontiev's scientific school, cycle reasoning is realized where cognitive structures are formed during phylogenesis and ontogenesis in mutual activity of a child and an adult or teacher-student, and then they structure individual activity in actual-genesis of image or behavior". Schema as the category of psychology of cognition and comprehension gives the opportunity to develop didactic semantically centered approaches and systems of operationalized study of text as the teaching process content in the context of semiotics – the science of heterogeneous sign systems providing different human activity, specific communication and outer world understanding in all its appearances.

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Practical Psychology

Kozhuhar G.S.

Phenomenon of tolerance during psychotherapy

The article suggests a structural-dynamic model of tolerance in interpersonal intercourse and reveals its main levels and stages. The author's ideas of tolerance in interpersonal intercourse, its formation, development and display are illustratedby the example of the psychotherapeutic relations, described in one of Irvin Yalom's short stories "Fat woman".

Key words: *tolerance, structural-dynamic model of tolerance, level of tolerance, emotional-cognitive discord, reflexivity, critical dialogue.*

Both theorists and practicians of psychotherapy admit the importance of psychotherapeutic relations.[1] Many classics of a foreign and domestic science devoted to this question their special works in which the features of healing relations, the opportunities and difficulties of their creation, the influence on efficiency of therapy results were described. The relations developing between the psychotherapist and his client are understood as one of the main determinants of psychotherapeutic change: aims, beliefs, ways of oneself and world's perception, unconscious experiences and the client's behaviour are subject to change. Proceeding from the idea of the integrity of an inner life it is lawful to assert that the change in any area can generate a «snow-ball» effect and will cause changes in all system as a whole.

Not only the client is changing during psychotherapeutic relations, but also the therapist is. And what internal psychological factors influence the process of psychotherapist's changing? What role does the tolerance shown by the therapist to the client carry out during the construction of healing relations? The article called attention of readers is an attempt to give the answer on these and some other questions.

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[1] In the article the concepts "psychotherapy" and "consultation" are understood as synonyms as it is used the psychological model of psychotherapy in which healthy personality is assisted by psychological means in solving problems and difficulties connected, first of all, with personal growth and development (the comment of the author).

We have developed a model of tolerance in interpersonal intercourse as well as the scheme of stages of tolerant reaction to the partner in the intercourse. For the purposes of illustration of the model of tolerance we used quotations from well-known psychotherapeutic best-seller by Irvin Yalom (Ирвин Ялом) «Treatment for love and other psychotherapeutic short stories» (a short story "Fat woman"). The offered model is only one of possible schemes for interpretation of such a complex phenomenon as tolerance.

In spite of the fact that the problem of tolerance became a subject of scientific research not so long ago, various aspects of the problem generated interest of theorists and practicians. In particular, general philosophic problems of tolerance have been considered (J. Bromlei, R.R. Valitova, V.A. Lectorsky, I.B. Gasanov, M.P. Kapustina, M. Mchedlov, L.V. Skvortsova and others); an attempt of the psychological and pedagogical analysis of the problem has been made (D.V. Zinoviev, P.F. Komogorov, O.B. Skryabina, K. Wane and others). In psychological researches tolerance is considered as an unliability to external influences, adverse factors, that is as a stability (F.B. Gorbov, J.M. Zabrodin and V.V. Golubinov, V.I. Lebedev, E.A. Milerian, E.G. Lukovitskaya, E. Frenkel-Brunswik, M. Comadena, R.W. Brislin and others). A stability to manipulation and an opposition to influence (E.V. Sidorenko, A.U. Panasiuk, I.B. Sheburakov and others), a psychological stability in destructive and overwhelming situations (G.U. Platonov and others), a frustrational tolerance (G.F. Zaremba, B.A .Vyatkin, K.V. Sudakov and others), a stress-tolerance (A.A. Baranov and others) are studied.

In the context of social psychology it is possible to meet the understanding of tolerance as a tolerance to any differences (ethnic, national, religious, racial, etc.) (D. Brodsky, A. Gerber, E.G. Lukovitskaya, N.V. Moldengauer, V.F. Petrenko and others). The problem of tolerance is analyzed in a context of action aspects of intercourse (V.A. Labunskaya and others), in connection with a search of fundamental conditions of tolerance (T.P. Skripkina and others).

In the context of consultation and psychotherapy the problem of tolerance also becomes more and more actual, especially owing to the increase of a role of differences in the most various spheres of vital activity (P. Pedersen and others).

At the same time, despite of an increased interest of researchers to a problem of tolerance in its most different aspects, there is no common understanding of the given area of problems in psychology up to now; and the system of notions and conceptions hasn't been formed. In the present article, as it was already marked, there is one more attempt of the analysis

of a problem of tolerance as one of the conditions providing an efficiency of psychotherapy in particular, and of interpersonal intercourse in the widest sense.

In the reasonings the initial understanding of sense of tolerance included the ideas of tolerance as a stability to conflicts (A.G. Asmolov, 2000) and as a generalized disposition having the wide range of displays (D.A. Leontiev, 2001). Moreover the important preconditions of a structural-dynamic model of tolerance in interpersonal intercourse were some ideas which seemed to us to have been formulated by philosophers the most precisely. First, these are P. King's ideas about the tolerance as a denying of intolerance. At the same time tolerance consists in restraint of hostility in combination with either the postponed negative reaction, or its replacement by more positive reaction. King's definition allows speaking about two levels of tolerance: the first means a delay of the negative reaction; the second assumes readiness for understanding and entering into a dialogue with the person who causes the negative reaction [1]. Second, this is B.A. Lectorsky's idea, according to which tolerance is possible «as a respect for an another's position in combination with an aim at a mutual change of positions (and even in some cases a change of individual and cultural identity) as a result of critical dialogue» [5, p. 54].

In the beginning we offer the description of the model, and then its illustration and the description of stages of tolerant reaction with help of the analysis of psychotherapeutic sessions with Betty (I. Jalom, "Fat woman", 1997).

The structural-dynamic model includes three basic levels of tolerance's existence and display.

The first level – dispositional – is a level of fundamental basic aims generated on the basis of value-sense system of a person, including the system of relations with the World and other people. The given structural-dynamic formation belongs to stable nuclear layers of an internal psychic life, but at the same time, is opened to a stream of the new information from the external reality.

The second level – reflective – represents a field of direct intrapsychic reactions to the external situation «here and now». This level includes layers both unconscious aims, notions, stereotypes, etc., and the field of understanding and reflective processes.

The third level is characterized by display of behavioural reactions: in fact, this is displaying of the concrete act of *a tolerant reaction*.

As an important factor of actualization of tolerance we consider a personal maturity which display is the tolerance. The mature personality, besides many important qualities which we are not going to list, is

characterized by the high level of reflexivity and the advanced ability to self-determination and self-perfection.

Let's sketchy consider the most important points of the moving of Yalom's relations and his patient in the context of the problem of tolerance.

It is necessary to emphasize, that since the very first moment of acquaintance with Betty, Yalom feels bright negative to the patient. «Thick women caused disgust in me. I find them loathing… Where have these unworthy feelings come? They are rooted so deeply in the past that it hasn't come to my mind to regard them as prejudices. But if I was asked to answer, I would probably refer to my family, to the thick and imperious women surrounding me in my childhood and among whom my mother was» [5, p. 95-96]. From this description of introspection it is possible to draw a conclusion about the presence of a stable prejudice. The stereotyped negative attitude to fat women, having formed in the early childhood, is also intensified with that standard into which the image of the Woman has transformed during the life. Yalom writes: «I can come out with a suggestion. I was always delighted with a female body – probably, more, than other men. And it did not simply delight me: I ennobled, idealized, and exalted it beyond all reasonable measure. Probably, thick women irritated me with profaning my dream; they were a sneer at fine features which I idolized» (ibid., p. 96). Thus, during perception of an "object" it is categorized and evaluated: the contrast between the standard and reality, discrepancy between expectations and reality arouse disgust, loathing and a number of negative emotions.

Hence, *the first stage* of display of tolerance in the interpersonal intercourse can be characterized as *antagonism in relations* (obvious or latent), the basis for which are *negative emotions and feelings* to the partner, its *categorization and evaluation*.

As it was already marked, the maturity of a person assumes the advanced ability to display tolerance, because it is included in its dispositional structure as spontaneously (or purposefully) generated during the life. In this sense tolerance appears as a result of deliberate efforts and internal work, overcoming of oneself and one's negative qualities from the point of view of a self-appraisal. Moreover, the adequate reflexivity of a present level of one or another personal features allows to formulate the purpose of self-development precisely. Both personal, and professional maturity assumes not only and not so much existing, "stiffened" structures, but, what is the most important, it assumes an acceptance of the responsibility and an orientation to self-modifications. Yalom writes: «The relation, the relation and once again the relation cures that is my professional motto. I frequently tell students about it. I also tell them about

the other things – about how to properly treat a patient: about an unconditional positive estimation, acceptance, sincere interest, empathic understanding» [5, p. 99]. How far these ideal relations are from those negative feelings which Irvin Yalom tries to hide: «Probably, trying to hide my negative feelings, I was too zealous and made a beginner mistake, having started to offer her versions» [ibid., p. 102].

Irvin Yalom, having realized the features of his relation to Betty, pays his attention to the following: «I have always a very serious attitude toward making a therapeutic contract with the patient. When I undertake to treat someone, I assume a liability to support this person: to spend as much time and forces as it will be necessary for improvement of the patient state, and, first of all, to have warmth and sincerity for the patient.

But could I have such things for Betty? To tell the truth she pushed me away. I needed an effort to force myself to look at her face, so much it was covered with fat. Her silly comments were also unpleasant to me… It was difficult to me to imagine a person I would like to chum up with *even less*. But it was my problem, instead of Betty's problem» [ibid., p. 98-99].

The reflexivity helps Yalom to set himself as a clear and concrete object: «After twenty-five years' practice <u>time to change</u> <u>has come</u> »[2] [ibid., p. 99]. Thus, in our opinion, the second stage of tolerance consists in a reflexivity of relations' features, and, in particular, in comprehension of a disagreement between carried out categorization and negative emotions towards the patient with that image of a psychotherapist who should be a professional entering into a special sort of interrelations. We have conditionally termed such disagreement as an emotional-cognitive discord because the important element of it is a comparison between I-am-real "here-and-now" and I-am-real, but, at the same time, standard-professional. As a result of it there is a negative self-attitude which, probably, induces to make a purpose of changing. Besides the comprehension of a disagreement in a form of the emotional-cognitive discord initiates an acceptance of the responsibility: «The first step in any therapeutic change is an acceptance of the responsibility» [ibid., p. 102].

So at *the second stage* of display of tolerance *the reflexivity of the emotional-cognitive discord* induces to take *the responsibility* for "denying" of other person upon oneself that entails to make a purpose of *changing* of oneself.

But in what way is this changing carried out – that is the very work at oneself as a result of which the negative feelings and negative estimations towards the other person are transformed to displays of an

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[2] It is underlined by me (G.S.).

unconditional positive estimation, acceptance, a sincere interest, and an empathic understanding?

Answering this question, we use a notion of coping (совладание) for the explanation. In our opinion a tolerant reaction is based on an intrapsychic coping reaction. Nowadays the most popular approach is one which considers coping as a dynamic process, and its specificity is determined not only with a situation, but also with a degree of the personal activity aimed at solving problems which have raised under the collision with a stressful event. Many authors understand a coping as a process of mobilization and management of internal and external resources and their adequate use in a situation (S.K. Nartova-Bochaver, A. Libina, A.V. Libin, N.A. Sirota, V.M. Yaltonsky, J.C. Coyne, R.S Lazarus, S. Folkman, D.J. Terry, A.G. Bikkings and R.H. Moos, L.B. Merphy, A.Moriarity, C.R. Snyder, C.E. Ford, R.N. Harris and others).

Yalom asks a question to himself: «What did I want from her? From her point of view, she was very frank. I had to formulate exactly what did not suit me. What in her confessions left me indifferent? I was irritated with her constant confessions in something that was happened in other time and in the other place. Betty was not able or was not ready to reveal herself at the moment we both were present at. From here there were her evasive answers "well" and "okay" that appeared every time I asked her about her feelings here-and-now» [5, p. 105]. This recognition follows a need for an establishment of deep true relations, and an expectation of «the basic meeting» which has a healing influence both upon the client, and upon the psychotherapist. These are those psychotherapeutic relations which change. It is possible to conjecture that the actualization of the need for true relations results, in turn, in *a mobilization* of internal and external resources which are connected to fundamental value-sense formations of the personality, its system of relations to the World, to other people, to oneself. In this case the basis of such relations is the already mentioned unconditional positive estimation, acceptance, sincere interest, empathic understanding and others. Besides the psychotherapist should be decentralized from his inner life over the inner life of the partner of the intercourse in order to create real dialogical relations. In this instance the decentralization is an integral part of the psychotherapist's professional activity testifying his skill level.

As we have already underlined, fundamental resource of the tolerant reaction, in our opinion, is value-sense system of a person and a system of relations with the world and other people. So the *third level* of tolerance can be perceived as the *mobilization* and the *control of resources* (first of all value-sense system), and also the decentralization from oneself over the

inner life of the partner of the intercourse to set up deep interpersonal contact.

There is also *the fourth level,* which suggests tolerant reactions in behavior.

How does Irvin Yalom solve this problem within the framework of psychotherapy?

Here is how he analyzes the state of boredom that he survives speaking with Betty. " I have to be accurate and constructive. I asked myself what was boring in Betty, and I found out two obvious features. First she has never told anything personal. Secondly they were her stupid smiles, exaggerated cheerfulness, unwillingness to be really serious. It was difficult to help her to realize all these features without hurting her. I have taken such a strategy: my main premise will consist in the fact that I want to approach her, but her behaviour prevents me.

I thought in this context it would be difficult to be offended with criticism of her behaviour" [5, p. 103-104]. We can formulate several conclusions from this quotation:

First there is a fear to hurt, that is to say to destroy positive relations, secondly nevertheless there is an attempt to show Betty, using critical remarks, particularities of her behaviour, making difficult real contact with her. Thirdly there is a desire to make criticism precise, it means based on facts, and constructive.

Further Yalom continues to analyze causes preventing mutual understanding:

"It immediately led to comprehension why Betty seemed me so boring: she played a role before me- in our intercourse she had never been herself, she had always pretended and had defied her exaggerated cheerfulness" [ibid., p.105].

In our interpretation, at the fourth level of tolerant reaction, they use a critical dialogue, with the purpose of real change of behaviour "here and now" through mutual self-disclosure of the partners of the intercourse. Transition to the deep level of communication changes the participants, and the unpleasant, evoking disgust partner becomes an interesting, exceptional interlocutor. There are two quotations testifying the changes that have happened in relations: "There was no need to dismiss the disturbing thoughts about her appearance. Instead of paying attention to her body, I looked into her eyes. Now I noticed in myself with great surprise the first sprouts of empathy [ibid., p.107]; "Now every minute of the session my attention was completely attracted to Betty. Who could imagine, that this woman whose meaningless chatter, that tired me, will turn into an acute, spontaneous and sensitive person?" [5, p.114].

Summing up the above-mentioned, let's underline once again the levels of tolerant reaction during interpersonal intercourse.

The first level of tolerance in the interpersonal intercourse can be characterized by antagonism in relations (obvious or latent) the basis for which are *negative emotions and feelings* to the partner, its *categorization and evaluation*.

The second level of display of tolerance is *the reflexivity of the emotional-cognitive discord* inducing to take *the responsibility* for "denying" of other person upon oneself that entails to make a purpose of *changing* oneself.

The third level can be considered as *a mobilization* and the *control of resources* (first of all value-sense system), and also the decentralization from oneself over the inner life of the partner of the intercourse. This is only concentration on interrelations, dialogue, discussion; decentralization from oneself over another person can provide real tolerance, facilitating joint development of the partners of the intercourse.

Finally, *the fourth level* of tolerant reaction consists in different forms of relations. Particularly, it is *the form of critical dialogue*. In this case critical dialogue assumes the attitude to positive relations, revealing the facts involving difficulties of communication, mutual exchange of remarks.

The aforesaid ideas about the phenomenon of tolerance in interpersonal intercourse (illustrated by the example of psychotherapeutic relations), let us give

definition of psychological essence of tolerance of the subject of interpersonal relations as *a readiness to perceive another person and establish contacts through the critical dialogue, treat the partner as a interlocutor, as a consequence of overcoming the emotional –cognitive discord.*

Besides, according to Bozhovich L.I., the criterion of the personal new formation is its acquisition of motivational force. That's why the premise for statement, that the tolerance has been formed, must be its display as a complicated dynamic system that becomes the motive of the intercourse as a subject activity.

Tolerance shows in the desire of the personality to obtain mutual understanding and co-ordination of motives, attitudes, dispositions, avoiding aggression, suppression of the partner's dignity, but using humanitarian possibilities: dialogue, explanation, cooperation. In this connection, the theme of the dialogue, dialogical thinking acquires the special status in the problematic field of the research of the tolerance. In the opinion of V.A. Lectorsky, as we have already mentioned, the tolerance is

possible as a respect for another person's position in combination with an aim at a mutual change of positions as a result of critical dialogue. This is the critical dialogue, as we believe, can be considered as the main way to realize the tolerant position in interpersonal intercourse. The tolerance in the framework of critical dialogue becomes the feature of the openness of the free thinking.

The dialogue and dialogical thinking is one of the essential mechanism of formation and development of real tolerance, and the dialogism turns into the principle of the tolerant thinking.

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Psychology destined
for contemporary Russia

Dear colleagues!

On the 14ᵗʰ-17 ᵗʰ September, 2007 we will hold the fourth congress of Russian Psychological Society "Psychology destined for contemporary Russia". The principal tasks of the congress: conduct of scientific and education actions, summing up the results of the work of Russian psychologists during the last period and the search of the new reference points in their scientific and public activity. The work of the congress will be organized according to the following main lines: "Psychology destined for society", "Psychology destined for personality", "Psychology destined for State", "Psychology is an ancient science with the new image".

Until the beginning of the congress, Russian psychological journal proposes to readers a new column devoted to congress themes and ask Russian psychologists to express their opinion about the importance, role and functions of psychological science in contemporary society.

Feldshtein D.I.

Development of fundamental research in psychology

The subject of contemporary psychological science is determined by principal changes that have occurred in human society in general and in Russian society specifically.

These changes is a hallmark of civilization demolition in reality, and they have qualitatively transformed all the sides of the human lives-demographic, ethno political, technological, social, economic, they have also dictated new cultural and historical situation of our being.

It is psychologically important that's the world became quite different,- it is open. The masses of people move freely, and people who live many kilometers away from each other, nevertheless they are placed in the same information space, but what really matters- the people of today think differently, assessing the world and themselves in it.

These changes in a person are the most significant among other critical changes in the world and society. We bear in mind changes in perception, consciousness, mentality, spheres of need and motivation and of will and emotion of a personality, his vital rhythm, space activity, relation structure, soul emotions, ethical and value aspects of being.

On the one hand, the pressing situation of human existence at present has stimulated development of critical mentality, creative initiatives, social responsibility. It is favorable to development of a man as a person.

On the other hand the alarming differentiation of society, a rise of separatism, fundamentalism, nationalism, instability of ecological, ideological, social and economic conditions, discrediting of many moral orientations, manipulation of consciousness through mass media cause disorientation of people and mass socio-psychological stress, which is reflected in spiritual and physical health.

"Each century, except ours, had an ideal,-wrote a famous American psychologist Abraham Maslow, - a saint, a hero, a gentleman, a knight, a mystic. But we only proposed a well adapted to circumstances person without problems- it is a very pale and ambiguous replacement."

This ambiguous replacement is especially dangerous for growing people because the characteristic contradictions of development of children and youth have considerably increased at present and it causes an artificial delay of personal development, intensifies the growing of false needs, false interests, results in deviation of behavior, violation of mental life, elevated anxiety, aggression, important shift in interpersonal, intergroup relations.

For fairness' sake it is necessary to note that our scientists reacted quickly to a present situation adequate ways, the possibilities of keeping human qualities in a person.

However we don't take over the task in this report to analyze the psychological, psycho physiological and defectological studies done nowadays.

We are dealing with the prospects of scientific research directed at building fundamental-theoretical and experimental psychological studies of a man of today, his mental phenomena and processes, new norms of his mentality, psycho physiological, personal development, objectively stipulated by a gigantic leap that made society.

Today the problem of self-determination, comprehension, self-awareness who I am in this world – and closely linked to this problem, problems of identity and identification as a representative of a certain group, region, ethnos, country, contemporary human society.

The psychologists face such complicated questions as:

- What is the character of development of self-determination of growing people nowadays?
- What are the specific features of their consciousness?
- How do they change according to different ages and circumstances?
- Who or what do they identify with? (children, teenagers, youths, middle-aged people, they belong not only to different generations but different cultures and different social structures)

Fundamental research directed toward resolving this complex of problems requires collaborative efforts of psychologists, teachers, age physiologists, sociologists. We feel dire necessity of creation of new paradigm for psychological studies, new methods of analysis for arising complicated processes of development, self-development, self-determination and relations between people.

The problem of relations, their contents, mechanisms, structure expansion is the main objective of the psychology today.

First of all, it is a problem of relation of a person to himself and others, relations between people where , to our great regret, we observe the violation of many forms, lack of the most important feelings, even such ones as confidence and empathy.

How to guard, more accurately, how to restore real deep human feelings- personal qualities- it is a question addressed to specialists-psychologists who must intensify fundamental studies of relation system, interrelation of people that has got sharper especially today.

Naturally, among the problems of relations, interrelation of people " in a vertical position": children-adults, young people- elder people are of basic importance. We think it is important to reveal the role of each generation, functional amount of work, values, stereotypes of behavior, which have changed and moved out of position.

Up till now the adults, changing with ages physically and socially, however were struck off the researches of psychologists and off the process of development in its socio-psychological meaning, off history of development of an individual as an active subject, development of his consciousness, self-awareness, including problems of unconsciousness, sub consciousness and over consciousness , personal qualities and particularities. This "closes" certain very important questions of ontogenesis.

Special attention should be paid to organizing psychological studies pointed toward the finding the basics and principles for concepts of multi-facet and multistage forms of development of interaction between adults and children.

This problem got intensified due to different circumstances, among which we can mention, on the one hand, growing estrangement between adults and children who have considerably become mature, on the other hand, their social infantilism has increased. It is interesting to note that children become mature very often at individual level locally not as a personality, not as a subject but regarding demonstrative behavior. Studies of this issue should be done in order to strengthen the continuity of generations. Nonetheless there is a danger, and it becomes stronger, of disintegration of all system of cultural and historical inheritance.

We do not speak about the problem "fathers and children" in their usual interpretation, we suggest the large socio-cultural aspect of interaction between generations.

Unfortunately, the problem of interaction (not only relations, but interaction) of children and grown-ups is not examined up till now to a proper extent, and we even think it is not set as a task at appropriate scientific level. On the one hand we find it extremely important to define the essence, content of position of Grown-ups' World and Children's World as specific subjects of interaction, on the other hand we should distinguish and reveal space (structure, character) of their interaction.

We emphasize that we don't take under consideration the pressure of adults upon children, but their interaction and influence to each other, including the influence of children on grown-ups.

Beautiful lines of the poem written by Candidate of Technical Science , the poet from Voronezh Vladimir Semenovitch Ploutece could serve to illustrate our ideas:

Нахожусь ли в предчувствии боя,
Осязаю ли отдыха миг,
Поверяю я, детство, тобою
Безупречность поступков своих.

Не покинь меня, детство, останься
Справедливости чистый сосуд,
Наиверховнейшая из инстанций,
Дел и совести праведный суд.

In childhood we perceive a subtle difference between justice and injustice, truthfulness and mendacity, honesty and disgrace.

The author of the poem believes that we check all our acts according to notions formed in childhood. He is sure that people are very sincere in childhood and he compares this period of human life with a clean vessel.

The question how this consciousness, this children's comprehension develops, How personal position of a child is formed at different stages of childhood and what socio-psychological structures provide inner self-determination, distinct relation of a growing man to himself and encirclement, many other topics insistently require carrying out full-scale theoretical and experimental studies that let advance and substantiate new fruitful conceptions.

We also need to focus on the problem of penetrating into complicated interrelations between people, so called, "in a horizontal position": different social groups, structures, communities. Especially now when there is a tendency of exacerbation of contradictions all over the world, we can appreciate many-sided nature and extraordinary difficulty and at the same time weakly studied field of psychological characteristics , for example, of ethnic communities, their mutual penetration, on the one hand, and on the other hand- self-determination, their changing, aggravating interrelations, and also connected to all this problem of preventive treatment of ethnic phobia, xenophobia and education of tolerance.

Among their number, there is the task of elaboration of psychological and pedagogical foundation of formation of personal qualities consolidating the best features of a concrete ethnos, Russian people and human values.

I needn't to explain in your audience what role acquires fundamental psychological research directed to find the ways of modernization of education.

Here psychologists face, first of all, the necessity to reveal, in close cooperation with teachers and physiologists, of course, peculiarities and the law-governed nature of development of contemporary childhood, ascertaining disposition, dynamics, and intensity of changes giving rise to new characteristics.

For our purposes we'll have to determine the system of coordinates which limit and reports in depth processes in the space of childhood: physical and mental maturing, society admission, assimilation of social norms, roles, positions.

Today there is a pressing necessity in complex psychological and physiological

studies of the character and the stages of relationship of physiological and psychological aging in the process of ontogenesis. We should correct the periodization of Childhood as a scientific basis for improvement of educational system.

Psychologists are expected to propound new conceptions revealing the character and particularities of a complicated process of assimilation of knowledge be contemporary children in conditions of changes of knowledge space, the answers to the main questions about the character of its systematization, its level, width at different stages of learning, about possibilities of optimization of mental and speech activity of children, about particularities of their mastering of mental operations, activities , about reserves and conditions of development and goal-oriented formation of cognitive abilities, about psychological mechanism of understanding of different subjects, particularly, linguistic and mathematical literacy, apprehension of historical space.

Let us reveal and precise, for instance, some more specific questions:

- How to get acquainted in psychologically correct way teenagers with the works of Griboedov and Leo Tolstoy that they cannot realize at their present level?
- How to explain to a contemporary youth the historical events of XVIII, XIX.XX centuries? Do you remember that the interpretation of the events during the Second World War has greatly changed?
- ow to keep the need of spiritual development, to improve aspirations at present ideological chaos?
- In our century called by a French psychologist Moscovici a century of the crowd, studying emotional state and power

potential how to distinguish possibilities of the young people and use them for their sake, preserving their individuality?

There are many similar questions destined to psychologists now.

It appears important along with the above mentioned questions, working out scientific psychological, psycho physiological and psychological and didactic basis of the derivation of up-to-date text-books, revealing their interrelation with new information technologies including Internet. We have to stipulate the influence of the text-book at present condition of globalization of information environment.

These are psychologists who are called to find the ways of combining stable educational material and their opinion about "supplies" of mass media, "supplies" of different quality and potential.

The problem of combining different schemas of information perception has grown at an accelerating pace: on the one hand there is information received from text-books and teachers, on the other hand, there is some information taken from large information flow consisting of transmissions and Internet sites that enlarge the space of meeting with virtual reality.

In this connection, the significance of experimental studies of psycho physiological mechanisms of cognitive activity at different stages of age development as theoretical foundation for creation of new methodological approaches to education and up-bringing has greatly increased.

The conception of Toffler O. has been substantiated today. He states that our world is on the way to postindustrial society where the productions of high energy and material capacity should be replaced by production of ideas and information (please note, that in the United States, for example, 60% of able-bodied population are occupied in the domain of information technologies, compare- only 3% of able-bodied population work in agriculture, in industry it is about 13%).

As this takes place, people are always late in their attitudes to changing, self-reproducing technical schemas; psychologists should carry out fundamental research, related to reveal possibilities of adjustment to new technical means of school children and students, and the selecting attitude toward information, the skill of range information in the process of knowledge acquirement.

Herewith it is necessary theoretically substantiate and experimentally check: How, where and what are the limits of computerization of learning. The work on computer must not reduce children's enterprising spirit, must not destroy their creative imagination and simultaneously it must not take them away from reality.

It should contribute to development of qualities typical for active subjects.

Psychologists in close cooperation with specialists in educational methods are simply obliged to concentrate their studies on revealing surpassing abilities of growing people, conditions of development of their mobility in acquiring and comprehension of new technical and technological systems and contemporary level of society culture, in formation of cognitive needs, conditions and mechanisms of intellectual potential.

A contemporary man lives in new rhythm of life and work, in new temporary structures that change the mentality, its stability.

There are alterations, specifically, in communication modes and its principals, Spontaneous communication gives up place to telephone communication or communication with the help of Internet.

What happens in intellectual and emotional spheres of person's mentality? How does the linguistic activity change? These are the questions that require immediate psychological research.

Theoretical and experimental works directed to determination of psychological possibilities of up-brining of a child, a teenager, of a youth are of crucial importance in our science.

The studies that discover laws of cognitive, social and spiritual development are brought to the foreground. Their goal is revealing secrets of a growing person, inner life, sufferings, doubts and aspirations, common and specific, including creative abilities of children, particularities of formation of spiritual needs, development of motives of multi-facet activity-playing, educational, work, sport, artistic activity; communication and other forms of human activity-individual and group activity.

We have to acknowledge that we have thoroughly studied subject and practice side of human activity, especially of a growing person. But we have weakly considered the side of motivational-emotional type of activity. Meanwhile this side of activity is getting the main factor of development of the contemporary man and society.

That's why fundamental psychological studies of creative, particularly, artistic activity, activity that enables to understand the world through emotions are topical.

Naturally, a specific status is conferred to psychological studies of arts creating "surviving reality", giving a man the possibility to "endure what has never happened".

There is a lot of work to do studying changes in personality development, first of all, the possibilities of strengthening of emotional stability of growing people, their psychological stability against appeared

difficulties. In the second place we should intensify the search for new youth passions, including musical ones, to determine how they help to increase empathy. Thirdly we need to find the means of making healthier family and school environment. Unfavorable environment is the reason, according to psychologists and sociologists' data, of personality anxiety, school neurosis, mental deviations, development of border states.

Feelings of gladness, children's heroes (starting with heroes of children's tales) the aspirations for the future are opposed to grown-ups' world where every day parents speak how to survive and earn money plus cynical scenes of violence and sensuality "streaming" out off television.

So determination of means, mechanism of changing socio-cultural environment is one of the acute tasks of fundamental psychological research including revelation of conditions of formation of values of growing people, their attitudes and dispositions.

Therewith psychologists and teachers should choose: what are we preparing young people for? Do we accept the main values of West? (competition, success, power, money) Do we want to prepare the young man for the responsibility of himself and others, of the security all over the world stimulating acts worthy of a man's name?

In this relationship we must seek for efficient and unexpected ways of prophylaxis of drug addiction, act against a well-organized network of drug spreading which is also destined to sexual and mental enslavement of the young people.

The most important task of contemporary psychology and all its branches: pedagogical, infant,social, differential, age psychology consists in organizing at a new level studies of the core problems of those cardinal tasks which were not mentioned, but which are closely connected with the above mentioned. Unfortunately they were not considered last years. These are the problems of consciousness, thinking, speech, behavior, which require, particularly, special studies of collective, distributed consciousness, united intellect. It exists because school children can get the same information at the same time that their teachers do, using Internet.

One of the key problems, waiting for our goal-oriented studies, is the elaboration of new psychological, psychological and pedagogical basis of a contemporary teacher's professional and personal development and related to it the problem of content and work direction of school psychological service. It shouldn't be "a first aid" when the difficult situation arises, but it should be devoted to special psychological and pedagogical activity, when a practical psychologist is an intermediate link between psychological science and pedagogical practice. On the one hand his work facilitates working out clear attitudes and adequate methods of the

help to children and their parents, and , on the other hand, he determines topical questions of development of psychology as a branch of science.

At the same time we should create theoretical basis and make accurate structural determinations of different psychological help (do not confuse with medical assistance, which must be prevented) to people of different ages because we point out the strengthening of depression, growth of nervous and mental derangements, including posttraumatic derangements, attack of social phobias, strong fear of communication. All this emphasizes the need of development of mental health treatment, psychological consultations, creation of system of efficient of psychological and social and pedagogical rehabilitation, the elimination of consequences of nature, technology and social catastrophes.

This work requires deep studies of psychological and physiological and psychological mechanisms of derangements, conditions, means of compensation and correction.

The way the problems are stated, their decision require in depth studies of methodology of psychological science, verification of notion apparatus, search for new categories, elaboration of conception structure, mechanisms of mental phenomena, determination of principles, models of correlation of classical and postclassical paradigm in psychology, finding its place among other humanistic sciences.

It is obvious that the circle of psychological topical issues, requiring fundamental studies, is not limited by the above mentioned questions, it is considerably larger.

Today the many-sided space of new tasks, themes stretches before our eyes.

They suggest deep comprehension of what is happening and significant expansion of experimental works.

For example, we have not mentioned the problems of emotional states, stress overcoming, conditions of development of children's talents, the foundations of rehabilitation work of children with specific needs, revealing the causes of self-destruction behavior, psychological help to homeless children, social orphans, Psychology of deviation behavior, prophylaxis of adolescent aggression and vandalism of young people and many others. All they must be solved.

We should not disperse our efforts, we need to concentrate on core problems, that suggests the attempts of elaboration complex programs of fundamental studies in association with experimental studies, determination of arisen needs of new methods of psychological testing in age, pedagogical, social, differential psychology, psychological consulting and psychological rehabilitation.

Psychological science can not ignore a kind of a challenge from other domains of scientific knowledge, studying people and their development: existentialism, social anthropology, phenomenology, cognitology, understanding sociology, semiotics, physiology, informatics… We have to elaborate attitude to the data of these sciences, and to ensure the work on the boundary of these sciences. Relationship of psychology and pedagogies must be revised, because the goal of fundamental psychological research is not only to study human nature, but to find the ways of the development through the acquirement of achievements of material and spiritual culture. Besides, psychology must dismiss surrounding impostors.

We must take into account the fact that deep changes have occurred inside scientific knowledge. They are related to shaking of characteristics of classical thinking, particularly monologue approaches, different axioms.

Contemporary science is improving, is strengthening its positions, is enlarging the possibilities, absorbing the constructive principals and approaches of knowledge of a man, his consciousness, sub consciousness. It predetermines the quality of scientific research.

Positive result depends, other reasons apart, on coordination of our efforts inside the Academy and hundreds of psychological departments in Teacher's Trainings Colleges and classical Universities, Institutes of our country.

Unfortunately, all these departments, as well as laboratories of Research Institutes work according to the plans as a rule, connected with themes of the head of the department.

Frankly speaking, these themes are changed only formally, their subjects vary little, the head of the department just elaborates with his scientific workers, post-graduate students, teachers, candidates for a doctor's degree the same subject that formed the foundation of his own thesis 15-20 years ago.

This situation can not be tolerated furthermore. Scientific society needs to overcome the complex of key problems for science development. A part of them is presented to a further examination, refinement, addition. This is exactly only a part.

The need of creation of a coordination council of priority trends in psychological, psychological and didactic, psychological and physiological studies arose a long time ago. However its activity will have a little success if the appropriate departments of Science Ministry , Education Agency and Supervision service don't support it.

Moreover, it seems significant to address all the scientific funds from Russian humanistic fund of scientific researches with a proposal to change

existing practice of holding the contests and distributing grants. We think essential not to choose between the applications but to announce in advance at least half of the vital topics and problems that should be dealt with in applications. The grants must be allocated for development of appointed priority trends.

The same procedure must be established for applications submitted for government prizes in education. It is necessary to indicate what important topics should be treated and how these woks will be assessed.

So it is possible to coordinate efforts of all national psychologists to overcome perspective difficulties and to make a leap in this important field of human knowledge.

Conferences information

**State educational establishment of high professional training "
the Derzhavin G.R. Tambov State University"
Psychological Institute
Organize on the 7th-9th of June 2006
The Fifth Russian Internet-conference**

"Personal potential is a complicated problem"

Scientific lines of the conference:
- Psychological and social and psychological aspects of development of personal potential.
- Psycho physiological aspects of realization of personal potential
- Personal and professional potential. Self-realization of personality in educational and professional activity.
- Mental, *somatic* and social health of a person as a condition of realization of personal potential
- Possibilities of personal realization in the conditions of disease: problems of psychosomatics, special psychology)
- The problems of dependences in the context of personal potential.
- Subject under conditions of social and personal crisis.

Sankt-Petersburg Humanitarian University of Trade Unions

holds on the 15 th of June 2006 in Sankt-Petersburg

Scientific and practice conference

"Social psychology today: science and practice"

The aim of the conference is to analyze contemporary state and particularities of development of of social psychology.

Plenary meeting:

"Topical issues of contemporary social psychology"

A conference's work in committee:

Committee 1. The theory and the methodology of social science.

Committee 2. Psychology of Communication.

Committee 3. Practical psychology.

●psychology of management;

●organizational psychology;

●socio psychological methods of diagnostics, management, correction and control;

● other issues.

International Academy of Psychological science
Russian Psychological Society
Administration of Yaroslavl region
Yaroslavl State University
Psychological Institute of Russian Academy of Science
Interregional ergonomics association of Russia
Yaroslavl State Pedagogical University

hold on the 14 th -17th of September 2006 in Yaroslavl

International congress

"Psychology of the XXI st century"

The work of the symposium is organized according to the following main lines:

- Fundamental psychological problems.

- Organizational psychology and management.

- Psychology in education.

- Psychology in protection of health.

- Psychology in the system of state service.

- Psychological and social work with population.

- Contemporary psychological problems of social development.

- Psychology of professional training and personal realization.

- Psychologist-consultant: theory and methods.

The work in committees will be accompanied by symposia, discussions, round-table conferences, workshops of the famous group leaders of Russia and evening lectures on principal issues of psychology and its applied orientations. During the Congress we wish to discuss problems and prospects of International Academy of Psychological Science.

In memory of scholars

Petrovskaya Larisa Andreevna

(13.11.1937-19.03.2006)

On behalf of the psychological faculty of Moscow State University and social psychology department, we would like to inform you with deep sorrow that Larisa Andreevna Petrovskaya, Doctor of psychological Science, Professor, corresponding member of RAE, Honored professor of Moscow State University, professor of social psychology department of the psychological faculty of the Lomonosov M.V. Moscow State University died after a long grave disease on the 19th of March, 2006.

Larisa Andreevna Petrovskaya has worked at the social psychology department since 1972, since its creation. All these years she has totally devoted her energy and emotional forces to teaching and scientific work where she tried to draw students and post-graduates. During 33 years of work at social psychology department she gave lectures on general course of "Social psychology", special courses "History of social psychology", "Foreign social psychology of the XX th century" (in collaboration with colleagues), "Theoretical and methodological foundations of social psychological training", "Psychology of pedagogical communication", "Social psychology of health" and "Social psychology of daily routine". Larisa Andreevna was the favourite teacher of many generations of students at social psychology department.

In 2006 L.A. Petrovskaya was rewarded by the Lomonosov prize for her pedagogical work.

Under her supervision they have prepared 36 candidates of psychological science and they have done more than 200 undergraduate's thesis and graduation works.

Larisa Andreevna Petrovskaya was at the source of social psychological training in our country. Her books "Theoretical and methodological problems of social psychological training" and "Competence in communication: social psychological training" are devoted to comprehension of

what is happening in this field of practice, especially important for the development of the competent communication of representatives of human-oriented professions and correction of difficulties of everyday communication. Problems of interpersonal communication-pedagogical, family, daily communication have been in the field of her scientific interests.

She is the author of more than 70 scientific published works, among them –monographs, manuals and textbooks.

Larisa Andreevna was a member of two scientific councils of the psychological faculty of Moscow State University, an expert of Russian State Scientific Fund, a member of the expert council of the age physiology and psychology department of Russian Academy of Education.

Larisa Andreevna was a bright person, she put her heart into everything she did sparing no pains to translate into her life the main principles of humanitarian and assisting psychology. She always came to rescue of colleagues, pupils and those people who came across her life.

For many years she has been engaged in social psychological enlightenment giving lectures across all our country, leaving there a piece of her heart.

Helping people was the meaning of her life, and even serious illness couldn't interfere with her plans. Colleagues, friends and numerous pupils, who loved her dearly, are grieved by her death.

The memory of Larisa Andreevna Petrovskaya will comfort the hearts of those who had a chance to be acquainted with her.

Submit of publishing material procedure

The original theoretical and experimental works on various branches of psychology and reviews of native and foreign research can be published in the journal.

To be accepted for publishing in the journal the material should be on diskette typed in Word, 14 pointtype, sesquialteral range, printable field of 2,0 cm, not more than 20 pages in size, including the list of cited literature. The text should be typed in standard font of type: Times or Arial.

If cited in article the literature is pointed out alphabetically at the end of the article. The literature in foreign languages goes after the one in russian. Reference to sources as a sequence number of the cited book or article (with the number of page in semicolon) is denoted in brackets. Materials for «Scientific life» section are accepted in the course of (within) 2 months after ending of the corresponding congress, conference, convention, etc.

The figures on diskette should be in separate files (TIF or PCX format) with printout and the caption index. It is allowed to file a figure direct in Word within the text of the article.

It is essential to attach to the article a summary – not more than half a page in size – and key words, as well as author information (name, surname, (patronymic name), home address, ZIP code, telephone number, profession, academic status, place of employment and official position, date of birth, passport data, retirement insurance certificate number, PTN – personal tax number, TIF electronic size photo of 300 dpi definition or no less than 10×15 size photography).

Forwarded to editorial staff, materials should be presented in two languages: Russian and English.

The article sent to the author to complete and being not returned to the appointed date is excluded from the editorship's stock of orders.