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Editorial

The educational reform is Russia is in full swing, so the section of Psychology of education and learning is the most widely presented in the current issue. The international collective of authors Frédéric Yvon, Ludmila A. Chaiguerova and Denise Shelley Newnham considers different interpretations of the works of Lev Vygotsky — famous psychologist and methodologist. The authors suggest original ways of incorporating Vygotsky's ideas into the modern educational system. Dmitry A. Podolskiy presents his study of value hierarchy among students and adolescence in the article "Multimethod approach to measuring values in a school context: exploring the association between Congruence — Discrepancy Index (CODI) and task commitment". In the article "The role of reflection and reflexivity in the development of student's abilities" Vladimir D. Shadrikov explores the role of reflection in the educational process. The group of authors headed by Nikolay E. Veraksa state that dialectical thinking is a specific line of cognitive development in children and adults and proves this statement by the empirical data ("The structural dialectical approach in psychology problematic and research results").

The Social Psychology section of current issue of *Psychology in Russia: State of the Art* touches upon the challenges that executive leader face in the light of the rapid development of information technologies (Takhir Yu.Bazarov, Yuri S. Shevchenko "The executive leader in the post crisis era"). The authors present the concept of multiple identity, which is the condition of successful leadership together with strong will power and vivid imagination. The authors of *Psychology in Russi: State of the Art* keep on investigating the problem of psychological security (Aleksander I. Dontsov, Elena B. Perelygina "Tense situations and the significance of stability for psychological security"), which has become urgent in contemporary society, facing the consequences of the terrorist threat.

Important change in Russian psychology is marked with the appearance of the position of the medical psychologist in Ministry of Health of Russia during this year, so special attention is given to the section of Health Psychology and Clinical Psychology. Yuri P. Zinchenko, Elena I. Pervichko and Anatoliy V. Martynov report of the successful application of Vygotsky-Luria syndrome approach to the investi-

gation of the psychosomatic syndrome in the patients with mitral valve prolapse ("Psychological underpinning of personalized approaches in modern medicine: syndrome analysis of mitral valve prolapsed patients"). The section also presents the article "Cultural-Psychological and clinical perspectives of research phenomena of subjective uncertainty and ambiguity" where Elena T. Sokolova analyzes certain socio-cultural and personal predispositions, which determine the modern diversity of subjective uncertainty and ambiguity manifestations.

The second issue of the 6th volume *Psychology in Russia: State of the Art* contains not only reports about the latest advanced research in the field of Social Psychology, Psychology of Education, and Health Psychology etc., but also two book reviews: "A New Introduction to Psychological Thinking" written by Vyacheslav A. Ivannikov and "Developmental Neuropsychology" by Janna M. Glozman. Both of the authors are prominent scientists who have contributed a lot to the development of Russian scientific psychological school.

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Tense situations and the significance of stability
for psychological security

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Present reality gives rise to contradictory trends: the combination of new threats, tense situations, and destructive tendencies shapes awareness of the importance of identifying, assessing, and managing emerging situations and of developing new scientific paradigms.

The polyfunctional interpretation of psychological security correlates with the perception of stability as a specific arrangement of interactional processes and the relatedness of stereotypes, standards, sociocultural attitudes, and social perceptions. A tense situation clearly indicates the separation of the potential of the person and the group from the notion of subject-action in security promotion and maintenance. The depersonification of social institutions is accompanied by each person's growing attention to himself/herself and the increasing significance of this kind of attention in overcoming uncertainty and tension.

The process of making decisions in a tense situation often includes the phenomenon of the illusion of control over the situation, which can pose a threat to psychological security. The social significance of the promotion of psychological security calls for consolidation of efforts aimed at the stability of the society and the prevention of stress-producing situations.

Keywords: tense situations, subject of psychological security, dynamic stability, social perceptions, social and psychological consequences of the terrorist threat

Current trends in the transformation of social reality call for changes in the perception of psychological security, an analysis of new situations, and the development of new scientific paradigms. In the twenty-first century, the new institutionalization can be based on the analysis and prevention of challenges, hazards, threats, and risks to national goals, social ideals, and core values of the individual, family, organization, state, and society. In its new way, Russia encounters modified and new risks, threats, and challenges affecting the basic safety of our society in its different manifestations, forms, and levels.

In the present environment, which is characterized by an array of threats unprecedented in their scale, depth, and intensity, the concept of psychological secu-

rity has moved up to the level of research, which is essential for understanding the impact these threats have on the individual and their significance for changes in the motivation and value paradigms typical of social groups, for identifying ways of preventing personal destruction, and for studying changes in social relationships. "A crisis-induced environment affects the interaction between the person and society, making it strained, conflicting, unclear in its social consequences. "A person's consciousness and behavior go through deformation in a society affected by a crisis" (Zinchenko & Zotova, 2010, p. 45). Information wars, economic contradictions and political conflicts, and the growing significance of the Internet are redefining the focus of research attention in psychology.

The globalization of communication processes has spotlighted such aspects as the subject-subject relationship, "feedback", and the symbolic context of social interaction.

At the level of meanings, concepts, texts, values, i.e. everything that does not pertain not to qualities, but to contents that people can exchange, while also interacting with culture and sociocultural communities, we are basically disconnected, we exchange these contents all the time. This constitutes the dialogic nature of human existence. (Leontiev, 2009, p. 99).

The conceptual reevaluation of communication as a specific sociocultural phenomenon is especially important in the present context, as the process of globalization places a special emphasis on the dialogue between countries and people. In this new situation, "intersections" of cultural fields are becoming increasingly diversified. In the present environment, the level of an individual's development and his or her ability to decode texts depend to a large extent on his or her involvement in the network society (Castells, 2000, p. 105). Thus, both communication and interactivity become dependent on the level of expertise in modern information technology. The new communication space is still going through the stage of development, and the potential consequences of this process remain unclear in many ways. At the same time, undoubtedly, the Internet and virtual reality, which constitute basic elements of the new world of communication, feature a conceptual shift both in perceptions and in the understanding of the world.

These conditions are characterized by the dramatically increased scale of interrelationships and the extent of interdependence in modern society. These processes are so intensive and obvious in social communities and movements, countries and continents, multinational corporations and emerging markets that today's society is turning into a "network" society, where the core is represented by the global economy.This economy in contrast to the hierarchical model of the world economy described by F. Braudel and I. Wallerstein "operates as a single system in real-time mode throughout the planet" (Castells, 2000, p. 105).

The confrontation of the basic components of the problem brings two trends to the forefront. The first trend is connected to growing threats, crisis situations, and the destructive potential of the ongoing transformations; the second trend is connected to the minimization of the effect of these threats and crises and the search for efficient methods of controlling the forms and mechanisms of stability. From the perspective of the functional paradigm, the subject of psychological security is seen as an open-ended system communicating with the environment and thus

imparting dynamics to stability. Non-equilibrium and instability are no longer seen as destructive and negative. The transition from the equilibrium condition to the unstable, non-equilibrium one brings forth a new, previously unknown pattern. These approaches to conceiving security in the context of the dialectical interaction between the tension of situations and their stability suggest(1) the possibility of scientifically analyzing psychological security through the possibility of overcoming threats, (2) the importance of stability, and (3) the significance of stabilizing mechanisms for alleviation of tension in the subject-action domain and in the social perception of danger.

The concern about escalating tension in different economic, political, sociocultural, and external situations is clearly outlined in an article by V. Putin. The president of the Russian Federation states:

> "We are witnessing more and more often new regional and local wars. There are new zones of instability and artificially fuelled, controlled chaos. There are purposeful attempts to provoke such conflicts in close vicinity to the borders of Russia and our allies. We can see the devaluation and destruction of the basic principles of international law, especially in the sector of international security." (Putin, 2012, p. 2)

The devaluation of the principles of international security results in deformation of concepts and polyfunctional interpretation of the content of psychological security. Stability incorporates an array of interactional processes, relevance areas, correlation of sociocultural positions, socially approved types, and social perceptions. Increased tension is perceived by a person as the possibility of emerging anomie and destruction, as the likelihood of deformation of the person's objectives and role-play positions, as the separation of the individual level of attainability and the specific systems of relevance.

The modern period triggered the trend toward the differentiation of possibilities, the separation of the potential of the person, groups, and organizations from subjectivity in perception and the promotion of security. Addressing the issues discussed at the World Political Forum (Yaroslavl, September 9–10, 2010), foreign scientists pointed out:

> "The period of modernity ushered in new social relationships that were no longer directly associated with cultural, religious and even global realities; instead, these relationships were perceived in the contractual context. …The spirit of "proprietary individualism," typical of modernity, gave birth to "acquisitive societies." …In the establishment of states, the emphasis shifted from the supranational division of power to monopolization of legitimate power by national monarchs. Changes in the nature of war contributed to further rapprochement of kings and oligarchs: the latter provided income to the former in return for protection and security. This process gave rise to a new idea that became the quintessence of the period of modernity—the idea of the eternal, territorial, depersonalized state. (Pabst, 2010, pp. 234–236)

In the modern age, the depersonification of social organizations does not eliminate sources of and grounds for tense situations that affect the individual. In the first century of the new era Seneca wrote, "Safe time does not exist. Pains stem

from delights; wars break out during peaceful times and pillars of security turn into islands of fear; the friend becomes the foe, the ally partner becomes the enemy" (Seneca, 1986, p. 201). The tendency toward the depersonalization of the state during the modern period may deepen the significance of personal values, preferences, experiences, and perceptions.

In recent times psychology, led by philosophical science, has actively assumed responsibility for the classification of scientific approaches, which provides the foundation for the following types (and stages) of the development of scientific knowledge: classical, nonclassical, and post-nonclassical. The contemporary state of scientific knowledge is generally believed to be characterized by the concept of post-nonclassical science. (Zinchenko & Pervichko, 2012, p. 158).

Although present-day skeptics and alarmists still cannot come to agreement, postmodern theories highlight the "self-concern" of the person and the importance of coping in overcoming instability and uncertainty and in alleviating the intensity of strain and protecting the individual amidst global exposures.

A theoretical analysis of the nature of social situations in present-day Russian society reveals different forms of social contradictions and conflicts; volatility and stability have alternated with each other since the early 1990s, entering into combinations and forming fanciful symbioses. Social-philosophical and historical-psychological studies show that periods of radical social reforms inevitably give rise to new or modified forms of group consciousness, social perceptions, and ideological collisions. One of the theoretical classifications of these processes and situations is transformation changes, "the so-called 'unstable equilibrium' represented by alternating periods of partial or minor 'adjustments'[and] drastic changes" (Yemelyanova, 2009, p. 85).

Different forms of people's experiences of unstable situations are connected with collisions between tradition and new trends during the social and economic, cultural and historical process. According to Vasilyuk (1984), these forms of experiences can develop in two directions: negative ("failure") and positive ("success"). A person's negative experiences of an unstable situation are aimed at elimination, prevention, or alleviation of discontent, thus saving the person from commotion, giving him or her time to prepare other, more effective ways of responding. The negative experiences offer a selective choice of behavioral patterns without taking into account the entire situation and its cause-and-effect grounds.

The positive experiences of an unstable situation, which are notable for the application of the adaptive potential of the person, work as a focused process. The positive experiences of an unstable situation focus on the acknowledgement and acceptance of reality, the active evaluation of the actual situation, its comprehensive analysis, and an active search for and acceptance of assistance. The positive ("successful") experiences of an unstable situation provide organized and controlled satisfaction of needs and impulses, promote accumulation of individual experience in "mastering" real-life situations, and help to overcome the distress caused by inability to implement some instinctive programs of behavior (Vasilyuk, 1984, pp. 21–22). Such programs can be targeted at overcoming natural biological or social needs connected with intra- and intergroup relationships (such as competition and aspiration for dominance, subordination to the higher-ranking members of a

social group, group solidarity as important for "altruistic" actions of members of the group and for its overall survival).

The present environment offers new grounds for desynchronization and destabilization of the social and behavioral situation, the nature of expectations, the level of tension, and psychological security. There are passive and active components of people's experiences of unstable situations. The passive component is associated with experiencing one's actual existence as full of misfortune, fear, and sufferings. The active component manifests itself as seeking change in the state of things, focusing on positive experiences. The positive experiences of tense situations result from the impact of hostile natural, social, or supernatural forces on the person, and active experiencing of tense situations turns into the source and the cause of the social actions performed by a person, actions that are aimed at the achievement of stability.

Garfinkel (1963) pointed out that in interactional situations a person undertakes perceptive and rationalizing efforts to increase the stability of interpersonal environments and situations, to prevent anxiety and strains, to "normalize" events. "By 'normalize,' I mean restoration of perceivably normal parameters of typicality, comparability, likelihood, causal texture, instrumental effectiveness and strict utility" (Garfinkel, 1963, p. 189).

An analysis of emergency situations shows that their social and psychological factors and consequences lack scientific attention adequate to their significance. For example, Tarabrina and Bykhovets (2011) state:

> The social and psychological consequences of terrorist threats include victimization, antisocial behavior, rental behavior, *alcoholization*, family conflicts, stigmatization and discrimination, academic underperformance, aggravation of social conflicts in society.… The social and psychological consequences of terrorist threats are manifested in citizens' disbelief in the ability of the state (the government) and its law-enforcement agencies to protect people.

The epistemology of psychological security involves the analysis of not only obvious but also hidden connotations. The theoretical comprehension and rational "awareness" of a tense situation in the form of interpretation make a contribution to the systematization of the problems as they correlate with the stability of everyday life and the social environment.

The realities of the twentieth century posed the problem of equilibrium and stability in society in the context of perceived personal responsibility and personal choice. Unstable situations can cause deformation in the dialogical connection between the opportunity and reality; they can intensify the role and significance of the conscious, action-focused individual in conceiving, differentiating, and implementing opportunities and in assuming responsibility for his/her choice. When people are confident that they are free to choose the behavior pattern that is the direct expression of their own objectives and attitudes, social processes start developing in a totally different way than they do when people think they are being made to behave like that or when their actions are governed by economic incentives or external organizations.

The problem of experiencing unstable situations at the personal level calls for the identification of psychological mechanisms for protecting the individual against such situations. The direct objective of such protection mechanisms is to achieve the maximum emotional well-being possible in such situations. In the opinion of many scholars, protection mechanisms are required for the integration of the self and satisfy the requirement of the self in synthesis and harmony, which are often deemed as an independent motive for psychological protection.

Harmony in interpersonal communication is based on reciprocal relationships, "as the symbolic structures of the living world reproduce themselves in the form of cultural tradition, social integration and socialization, and these processes…can be implemented only through an action aimed at mutual understanding" (Habermas, 2000, p. 161).

Experiences of unstable situations in their subject-subject perception and interaction must and can be based on impartiality and consistency of moral principles, standards, assessments, and mutual satisfaction of interests in the process that George H. Mead referred to as the "universal discourse."The specifics of the moral principles that determine experiences of unstable situations were analyzed by I. Kant, who wrote that the moral principle invalidates standards that cannot be approved by everyone involved, and only those standards that express unanimous will can be accepted (Habermas, 2000, p. 100); these principles secure harmony and harmonization of social relationships.

Today, the implementation of moral principles that govern the process of experiencing unstable situations has been impeded because of the growth of social hedonism, the pursuit of entertainment and delight, and the attempt to avoid social problems. In this context, the instability of a social situation is caused by the conflict between economic growth rates and consumption growth rates; this conflict is accompanied by the rapid advancement of consumption psychology and changes in consumer values.

These characteristics are especially glaring during economic crises, when people are driven by beliefs and stereotypes in making rational financial decisions. Positive attitudes during a period of economic stability or recovery play a crucial role in making decisions based on confidence in success. The rational analysis of information can be ignored or rejected. Economic publications offer simulation models for different economies, taking into account not only econometric data but also the economic sentiment index and the population's confidence level; in the opinion of foreign scholars, the confidence level is inseparably connected with the economic situation and can cause social-economic instability when it moves down.

Conventional laboratory experiments designed to examine an individual's experiences in unstable or tense situations or to study trust or defense mechanisms quickly call into question the researcher's moral principles as well as the moral and legal basis for such investigations. Andreeva (1975) notes:

> Thus the problem takes yet another, somewhat curious turn: the connection between the methodological difficulties encountered when utilizing experiments in social psychology and moral and ethical questions. … The "complications," in moral and legal

terms, of sociopsychological experiments are recognized even by researchers who are far removed from such explicit methodological skepticism regarding the experimental method in social psychology. (p. 286)

However, an examination of specific data and their changes is of great importance for pertinent social and psychological research, and so we turn to published materials on the ranking of fears held by Russians, as analyzed in the journal *New Times*. The data obtained from the study are given in Table 1.

The debate in the psychological literature about the nature and meaning of fears, their affective basis, and their inversely proportional tie to the work of the intellect shows the functional significance of fears for controlling the behavior of the masses and large groups of people. Among the specifics of behavior that can threaten psychological security and generate tense situations and crises, the phenomenon of the illusion of control is fairly widespread. The transfer of rules and patterns that regulate a situation on a rational, substantively transformative level, in which the result is largely out of one's control, creates a belief in certain symbols and rituals and in the fact that a successful result is the result of an individual's abilities to effectively analyze information and make the needed decisions.

Over the course of research conducted in October 2012 with managers, entrepreneurs, and mid-level executives (N = 128) in Yekaterinburg and the town of Revda (the Sverdlovsk region), an informational and meaningful assessment of a situation and a set of information blocks were given to the participants; from this information, they created their own information structures. Within 10 minutes of a single additional block of information being introduced and discussed, 16% of the managers, 8% of the entrepreneurs, and 5% of the mid-level executives adjusted their evaluation. Once a second additional block of informa-

Table 1. Changes in the Ranking of Russians' Fears (1991–2006)

Rank	Nature and subject of the fear	% of those surveyed in 2006	% of those surveyed in 1991
I.	Fear of losing loved ones	54	45
	Absence of any kind of fear[a]	5	5
II.	Fear of war or large-scale massacres	43	53
III.	Fear of hunger	22	32
IV.	Fear of governmental tyranny Fear of bureaucratic tyranny at the hands of officials	22 60 (approx.)	16 –
V.	Fear of death	8	8
VI.	Fear of a public affront	7	9

Note. Data from What We Fear Most of All. A Scale of Fears, 2007, retrieved from http://psihology. net.ru/chego-my-boimsya-bolshe-vsego-rejting-straxov/

[a] Primarily men under the age of 29 with an elementary or highschool education.

tion was introduced and discussed, a delayed reaction was seen with in another 10 minutes. This time 13% of the managers, 11% of the entrepreneurs, and 7% of the mid-level executives changed their impression of the situation. These results are the effect of conservatism (a conservatism bias).The data obtained require further verification, but there was a tendency for the managers to become immunized against a change in the amount and content of information. It is telling that both entrepreneurs and mid-level executives, who bear organizational and economic responsibility for decision-making, exhibited less conservatism and more fluidity than the managers.

The study conducted with the same group of respondents on the phenomenon of the illusion of control showed that 57% of the men were willing to transfer rational assessments to the realm of probability and were confident of the accuracy of their conclusions. Only 33% of the women showed a desire for such extrapolation and such certainty in their own judgment. Confidence in one's competence and in the accuracy of one's prognostic evaluations is closely tied to the risk involved in the decision, to which the men were more inclined.

The data obtained are quite important for what they indicate about making decisions in a tense situation or crisis. Both the illusion of control over the situation and the effect of conservatism with delayed decisions pose a threat to the security of an individual, a group, or the social environment, depending on the content and scope of the decision.

Schneier (2008) offers a substantive explanation for the occurrence of such errors in evaluations of dangerous situations: "Danger is … a matter of perception as well as reality. And these are not the same thing."He shows that real security can be calculated mathematically as well as by taking into account the various risks and the effectiveness of the decisions that are made. However, it is psychologically important whether an individual feels secure and whether he or she perceives the situation as safe, given all the risks and decisions. A number of areas of research provide important material for examining these issues.

Four fields of research—two very closely related—can help illuminate this issue. The first is behavioral economics, sometimes called behavioral finance. Behavioral economics looks at human biases—emotional, social, and cognitive—and how they affect economic decisions. The second is the psychology of decision-making, and more specifically bounded rationality, which examines how we make decisions. Neither is directly related to security, but both look at the concept of risk: behavioral economics more in relation to economic risk, and the psychology of decision-making more generally in terms of security risks. But both fields go a long way to explain the divergence between the feeling and the reality of security and, more importantly, where that divergence comes from.

There is also direct research into the psychology of risk. Psychologists have studied risk perception, trying to figure out when we exaggerate risks and when we downplay them.

A fourth relevant field of research is neuroscience. The psychology of security is intimately tied to how we think: both intellectually and emotionally. Over the millennia, our brains have developed complex mechanisms to deal with threats.

Understanding how our brains work, and how they fail, is critical to understanding the feeling of security. (Schneier, 2008)

Many scholars highlight the interdisciplinary nature of the problems of psychological security; however, we note that the psychology of decision-making and the psychology of risk designated by Schneier have not been thoroughly developed by conceptual approaches in Russian science of psychology.

In addition, the psychological concept of risk is extremely pertinent today to the search for ideas and answers to the problem of deepening threats to human security. By making a detailed analysis of the concept of ruptures in historical development, Martinelli (2006) shows that the particular characteristics of contemporary society create risks awareness and cause risks to appear in different areas.

> Because of the danger of new, previously impossible global catastrophes, such as nuclear war or the destruction of the environment, risk becomes universal: these catastrophes affect everyone, regardless of class, ethnicity, or gender. In addition, risks are institutionalized in specialized organizations for which risk is an underlying principle (such as stock exchanges, insurance companies, sports events, etc.).Finally, apart from the fact that risks arise as the result of the probability of errors in abstract systems for planning, operational management, and control, they also occur as unanticipated results, or as the unforeseen or unintended consequences, of deliberate actions taken to achieve a legitimate public goal. (Martinelli, 2006, p. 143).

The risk of a terrorist attack increases this list of risks, as does experiencing a terrorist threat or the "psychological phenomenon of 'experiencing the threat of a terrorist attack'" through media coverage of ongoing terrorist attacks, information about them on the Internet, and so on (Bykhovets, 2008, p. 6).

Studies show that the intensity of experiencing, for example, a threat of violence or a terrorist attack decreases with increased distance from such events. The specificity of people's reactions to tense, difficult situations is reflected in the reactions of the human psyche and consciousness. In order to pinpoint the specifics of these reactions, we conducted a study using the methodology of "A List of Unpleasant Events," which is designed to study the frequency and subjective strength of the effects of various stressful events. Between 2009 and 2010, two groups of 42 people each were studied; they were 19 to 40 years of age. The first group consisted of 22 women and 20 men, all of whom were taking distance-learning courses at Liberal Arts University. The respondents in the second group (21 women and 21 men) were all employed in municipal companies and health-care organizations in Yekaterinburg. Two categories of events were identified in accordance with the results of the research:

1. The *primary unpleasant events* were most relevant to the respondents at the time of the study and had the most "weight."

2. The *important unpleasant events* were also relevant to the respondents, but they were not the cause of various types of disorders, stress, or an overall lower quality of life.

By analyzing the results of the data on the primary unpleasant events, one can conclude that the respondents had most often been upset, suffering, and experiencing negative emotions in the previous month for the following reasons:

(1) being outdoors in bad weather (an index of 3,249)
(2) suffering from the cold (an index of 3,248)
(3) having insufficient time to spend with a loved one (a spouse, children, or friends) (an index of 2,809)
(4) experiencing physical discomfort (an index of 2,530)
(5) experiencing adversity, failing college exams (an index of 2,436)

Thus, the problems faced by our respondents were basically akin to everyday difficulties, as the first two conditions are related to the objective surroundings and are daily, seasonal phenomena. We should note that these events had nothing to do with terrorist attacks or outbreaks of violence: they were not ethical conflicts or "experiencing the threat of a terrorist attack." It is possible that this result is due to the relatively stable situation in Yekaterinburg and the Sverdlovsk region, and thus the respondents had a greater sense of the importance of their individual health, happiness, interpersonal contacts, and educational success than of terrorist attacks or violence. For the students, the main causes of what were considered to be the "primary unpleasant events" were the inability to devote sufficient time to their families and excessive work, especially during the school year, which caused physical discomfort, while problems with exams and tests were seen only as slightly stressful events, as they were of a temporary, seasonal nature. Both groups of respondents had a clear desire to "take care of themselves" in order to overcome the volatile and negative nature of the situation.

According to the results of the study, events such as the following ones were included in the category of important unpleasant events in the previous month:

1. working on something despite being tired (an index of 2,397 on the scale of "achievements — education — work")
2. getting up early and being disturbed while sleeping (an index of 2,394 on the scale of "health and well-being")
3. conversations with unpleasant people (an index of 2,322 on the scale of "events related to other people")

Thus, the topics the respondents primarily categorized as important unpleasant events were achievements and problems related to work, education, health and well-being, plus unpleasant interpersonal interactions. In addition, all the important unpleasant events were ongoing, which can be interpreted to mean that they caused ongoing social stress that manifested itself in everyday life.

This research shows the relevance of studying the factors, characteristics, and event-related parameters of tense situations and how people experience them. The commonality of the tasks necessary to provide psychological security underlies the need for joint efforts to forestall risks, threats, and stressful situations and to increase the resilience of the social environment." The world that we as a group take for granted is a world of a universal situation, in which universal problems emerge

in a general perspective that require ordinary solutions using ordinary means to achieve ordinary goals" (Schutz, 2004, p. 627).Tense, extreme situations and threats to psychological security lead to the deformation of an individual's time perspective and provoke sociogenic psychic abnormalities. Social resilience acts as a kind of defensive strategy to ensure personal resilience and the development of personal potential in ongoing, sustained daily activities.

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SOCIAL PSYCHOLOGY

The executive leader in the postcrisis era

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This article describes psychological challenges that executive leaders of companies face nowadays. The study of the social context is based on changes that took place with the development of information technologies. The analysis touches upon such phenomena as virtualization, involvement in the external sociocommunicative environment, and the emergence of multiple identity. It is suggested that in order to adapt to changing conditions one should follow the path of self-development—in particular, to develop attention, imagination, and willpower. In connection with the traits generally attributed to executive leaders, the article emphasizes self-adjustment; common sense as an integral part of intuition, emotions, and imagination; and the readiness to make choices in fifty-fifty situations.

Keywords: executive leader, virtualization, multiple identity, attention, imagination, will

The postcrisis-era executive leader should possess such important traits as self-adjustment; common sense in combination with intuition, emotions, and imagination; and the readiness to make choices in fifty-fifty situations. The most general definition of "self-adjustment" is the building of functional interconnections between (1) a subject's actions and state and (2) the actions and state of the surrounding setting. Building such interconnections allows for introducing relevant and purposeful changes in the subject's actions, depending on the feedback from the previous step. In other words, this is an algorithm of changes based on feedback. All living things follow this algorithm. Self-adjustment serves as a pillar for one's actions and interpersonal relations and for companies and society. Control without feedback is nothing but a delusion. According to Leontyev (2003), those who do not consider the results of their own actions ought to be diagnosed as paranoid.

Understanding the state of one's immediate surroundings means comprehending a situation with multiple variables. In a situation of crisis, it is important to

update the present bridge between the past and the future and to build a new, more reliable one. It is important to come up with more thorough, strategic, determined, flexible, rational, and topical plans for life (to decide which programs to pursue and which to avoid). Kronik believes that such "bridge-building activity" usually starts with the client's "realization of reality and consolidation of the sense of reality" (Golovakha & Kronik, 1984). And it continues with reconsidering plans for life and resetting these plans; at this point new features can be found in the image of a new life.

Ermakov tried an interesting experiment: he made his students (masters of karate) do the impossible. They were used to routinely breaking wooden boards 1inch thick with their bare hands: he suggested they should try to do the same with 2-inch boards. While doing so they had their brain activity registered by means of electroencephalography. The students accomplished the task successfully only if the right cerebral hemisphere became dominant. The left one (the common-sense one) was telling them, "This is impossible; you'll break your arm. Do you really want to? What for?" The right cerebral hemisphere was responsible for generating emotions: interest, thrill, rage, excitement —and the thick board shattered (Ermakov, 1991).

Accepting one's emotions is somewhat part of romanticism; it involves regarding one's own freedom as a unique emotional state that allows one to act responsibly. But what is a "free-to-decide" action? Where does a sensible decision come from, what is it based on? If my sensible decision is based in reality as I see it, then my personal attitude will most probably be built on the same base. Here lies the cause behind my real deeds and actions. Does decisiveness belong to the category of irrational (as opposed to rational, not in the sense of insanity)? And can it be that decisiveness is the key to the infamous contradiction between affect and intelligence? But in this case psychological advice would have an esoteric character. My inner certainty in understatement is my freedom; it's a unique condition that precedes a one-time, spaciotemporally precise action. Why is it a one-time action? Because any action, just like any event in a person's life and just like a person's life, is a one-time occurrence. Such an action has never been taken before and will never be taken again. Why is it a precise action? Because I will never have an opportunity to undertake this action again.

A. Blatner, a psychologist, noticed two initiations in the lifetime of every person (2003). The first one usually occurs in adolescence, when one realizes that something in the world is depressing; this stage is hard to go through. The second one is connected with the midlife crisis, when one realizes that many things in life are depressing. This stage is even tougher. Adulthood is associated with harmony in dealing with both initiation stages and with harmony in accepting responsibility and humility. A crisis contributes to the arrival of the second initiation. In this connection, the key factor for the psychologist is the psychological crisis—the mismatch between reality and expectations, the failure of one's usual approaches, the inability to meet expectations, the "24-hour problem" (there are only 24 hours in a day), the inability to clearly read one's own deep feelings and desires. Being ready to make choices in a fifty-fifty situation means being ready to decide everything for oneself and to being ready to act accordingly. Here one comes to under-

stand that sometimes making choices is more important than the self-reflection that follows.

Social Context and the Challenges of the Present Time

The world as we knew it had gone through a considerable number of changes by the end of the first decade of the twenty-first century. Most of these changes involved the development of information technologies. For an individual such changes reveal themselves in constantly expanding virtualization, involvement in the external sociocommunicative environment, and the emergence of multiple identity (Bazarov & Shevchenko, 2010). Let us consider some features of these phenomena in detail.

Virtualization is a general term used to describe the process by which real things and actions are replaced by their images, by simulations. Through the Internet some actions can be performed as virtual analogues of real social interactions. For example, an online store is analogous to a real-life store, while virtual communities simulate the availability and proximity of people to talk to. Because of virtualization a person deals with an object's simulation instead of the object itself. We can "live" in virtual reality, being totally aware of the fact that it's conventional, that its parameters can be modified, and that one can always leave it. Some researchers believe that the community we live in becomes similar to virtual reality; in other words, this community can be described using the same characteristics (Ivanov, 2000). For example, a virtual economics would be one in which stock-exchange speculation is greater than production output.

At the same time, nowadays, unlike previously, a person is constantly in contact with other people. Thanks to mobile devices we are available 24 hours a day. And the act of communication has become as brief as possible. Very often key decisions are taken right in the process of communication; it is not possible to separate the idea-generation process from the idea-communication process. Social interaction on the Internet can be aloof, as happens when a text starts living its own life not in any way connected to its author. One of the peculiarities of a communicative environment is the constant process of interpreting. The object of interpretation is the text—the text seen as the whole system of language meanings used for communication. Sometimes we witness a person being reduced to the text. Only those things that are written, or typed, make a person existent because those written things determine that person. This kind of reduction brings a few problems, one of them being the problem of creating a universal descriptive image in the constant process of interpretation.

The current situation also brings up the problem of self-identity in the social environment. According to researchers, an identity is the feeling of personal continuity, equivalence, and certitude resulting from being a part of the whole that stands above the identity (Andreeva & Dontsov, 2002). The modern world does not have even a single universal wholeness to offer; that is why a person has no feeling of personal equivalence, or, in other words, self-identity. Everyday reality encourages easy role change and a corresponding change of identity. Being tolerant of the lack of self-identity becomes a key step in overcoming the "non-continuity," the "fragmentariness," of the social world. With the development of

humanistic values a human being starts to enjoy increased freedom in demonstrating the inner self. A person can choose the type of behavior depending on the situation. But when the criteria for decision making are uncertain, the problem of choice comes forward. For example, if in one situation a person accepts something that seems unacceptable in other circumstances, then the following problem arises: Can a person's principles and norms be universal? The multiple-identity situation may be hiding inner conflicts that come out when the actions do not match the inner views of the person. The above-mentioned conditions and other circumstances of the modern era cause a person to engage in an active adaptation process. Such adaptation implies mainly developing one's own psychic abilities. In general it can be understood as improving one's attention, willpower, and imagination.

Adapting to New Realities

Extra-voluntary attention

> "To be interested in interesting things."
> S. S. Averintsev, philologist and culturalist (1937–2004)

Any activity can be easy to do and engaging if the person performing it is interested in it. You will never be bored with something that is interesting for you. Very often the interest we develop is a natural reaction: we can get interested in a conversation that concerns us in one way or another; we can become totally absorbed by a movie with a catching plot, or we can participate in a sport. We do not push ourselves to do it; it just works out by itself. We admire those people who are "destined" to do their work; they are always passionate about their job, although the word *job* seems to be a bad fit for describing what they are doing. A way of life is beautifully intertwined in these professionals. It is impossible to divide their life into the time they are working and the time they are not. They can use every one of the 24 hours in a day to do something interesting. No boundaries separate their jobs from recreation. The strategy to achieve such an attitude has two variants. You may understand the field of your interest from the beginning and start doing what you enjoy. Stories of prominent entrepreneurs show that their early interests turned into businesses and eventually turned to their advantage against their competitors. Steve Jobs was fond of calligraphy and eventually developed new fonts for PCs. Or you may gain an interest in what you are doing now. But how do you get interested in something that is of no interest to you at the beginning? And how to maintain this attitude?

A child can play with one toy for hours by coming up with new ways to employ it. Why is it so interesting to look into a kaleidoscope? Because every time new combinations of colors and patterns present themselves. To give an example of how to maintain interest by constantly learning something new, let us look into the problem of sleepy truck drivers. It turns out that listening to a radio station where people talk keeps them more awake than listening to music does.

Our interest is conditional: the object of our attention needs to be constantly enriched. Try to think for 10 minutes only about the sun. You will notice that after

some time your attention will become less concentrated. And then suddenly you will notice that you are thinking about something absolutely different. Only by continuous thinking of more and more new details about the sun will you keep your concentration manageable and well maintained. Attention is like fire—it needs a combustible, which in our case is new information. If you do not add wood to the fire, very soon it will be out.

Let us imagine attention as a projector that directs light to a specific area. Unfortunately, its power resources are limited. Thus, the wider the area to be lit, the worse the visibility. The secret of maintaining an interest in something is the ability to concentrate and to direct the projector onto a specific spot. Kahneman (2006) conducted remarkable experiments to prove that the power of our attention is limited. Those who participated in one of the experiments were mastering the skill of performing two actions at the same time while their attention was divided between the major and secondary objectives. It was found that attention capacity could be easily determined by the success in performance of the secondary-objective task. At those moments when a participant became distracted, mistakes could be found in the secondary-objective performance. When not enough resources are present, the major task will be the first to receive a sufficient amount of power, and the secondary task is geared to secondary power. As a result, one task is performed better than the other. Thus, a reliable indicator of attention involvement was found in the degree of success in the secondary-task performance.

The obtained results were used in real life to supervise flight-operations officers and dispatchers in airports. They are required, from time to time, to perform one simple action without being distracted from their major duty: for example, pushing a button. The forgetfulness of a flight-operations officer can be taken as a signal that the attention resource is coming to an end.

Another subject worth deep consideration is broadening the span of attention through a search for weak signals. Living in the modern world, a human being is bound to process incredible amounts of information and thus may lose the ability to detect weak signals that indicate approaching danger or a possible success. Let us draw an analogy between such signals and a water lily in a pond. The leaves of the lily start from one cell, which doubles itself on daily basis. Claiming the surface of only 1% of the pond on the first day, the cells will completely cover the surface in just one week. In other words, it is important to anticipate an innovation before it becomes clearly visible, while it is still beyond our general comprehension. Such an ability is of essential importance for network economics because observations show that initially small units can grow into prevalent unions (Bazarov & Shevchenko, 2010).

A leader's ability to search for weak signals is also related to the perception and evaluation of the behavior of followers. Respect and attention to their needs are directly related to the effectiveness of leadership (House & Podsakoff, 1994; Yukl, 1998). The level of a leader's empathy can play a crucial role in this process. Empathy allows leaders to build a strong relationship with followers, to respond to their needs, and to influence their positive attitude to work (Clarke, 2010).

The more detail we want to see and to understand, the lower the distinction barrier and the higher the ability to distinguish, to differentiate between, objects.

Medical practice has a special term, *irradiation,* to define the pain that goes beyond the malfunctioning organ and echoes in another part of the body. The doctor's task is to examine what kind of pain it is and where it comes from so as not to mistake a heart attack for a nerve pain. In a case like this, in order to avoid a mistake the doctor needs to apply knowledge of the relevant medical fields. The details of pain description will be important only once they make sense, once the doctor has this knowledge of relevant medical fields. For example, sometimes in conversation it is important to hear something that has not necessarily been said. Another example is nonverbal communication. Along with the information one conveys through language, a lot can be learned through one's body movements and the intonation, rhythm, high/low pitch patterns, speed, and conciseness of one's speech.

Take, for instance, two people having a dialogue. You can judge whether they are on good terms with each other just by looking at whether their postures and body movements are identical. Bad relationships intensify compensatory reactions and multiply the number of body movements that are blocking the contact: bringing hands and elbows forward, stretching legs forward or to the side, leaning back, turning to the side, avoiding eye contact, or challenging the partner with excessive eye contact.

A Russian psychology specialist, P. Ya. Galperin, has suggested that attention can be perceived as reaching the perfectionism level when the control function is generalized and reduced to a minimum (initially the control function reveals itself in different forms in different people) (Galperin, 1957). First, the control function can be performed as follows: one person is doing the task, and the other controls his performance. Second, the person who is doing the task can later on check the result of his performance himself. And, third, the controlling process can be carried out by the performer himself while the task is still being done. Therefore, initially attention is present only as an external feature, and it is only with persistent self-adjustment that it becomes an integral, internal part of a person's life. For this reason, developing one's attention goes hand in hand with checking and counterchecking performance results. At an early stage of self-development this checking should be done by the means at hand; for example, a person could write down everything she has accomplished in a notebook.

Moreover, attention needs some rest. The key strategy in recreation and recovering one's energy resources lies in changing the type of activity one is engaged in. It's common knowledge that when antagonistic muscles tighten up, major muscles relax. But what do we need to change or switch to in order to regain attention? One of the variants is the three circles of attention span distinguished by Stanislavski (1994). The big circle includes all the settings one can observe and perceive. The medium circle includes face-to-face communication with partners. The small circle includes the person and the immediate setting he or she is acting in. Attention setting always depends on the activity. Outside is the big circle; the office is the medium circle; eating lunch is the small circle. If you have been working in front of your PC all day (in the small circle), then reading a book (also the small circle) as a recreation activity would be less effective than switching to a medium or big circle (e.g., watching a movie or going out to a concert hall).

One of the problems in expanding one's attention span is connected with the ability to accomplish several tasks simultaneously—that is, to disperse one's attention. Neisser's research work proved that successful dispersion of one's attention is possible through an exercise routine (2001). But a few conditions must be met to facilitate the development of dispersed attention: (1) different perceptive organs must be engaged in the action (e.g., drawing or listening to music), (2) anticipating schemes are required, (3) the first task signals should not camouflage the signals of the second task.

Anticipating cognitive schemes serve as an orientation and are responsible for our readiness to perceive specific information. For example, you are waiting for a specific flight in the arrivals section of a crowded, noisy airport when you hear a public announcement: "Attention passengers. Flight number [indistinct speech] is to land in [again indistinct] minutes." Why did you not hear the most crucial words, assuming they were pronounced in the same distinct manner and in the same loud voice? We are good at recognizing the words we anticipate, but we have difficulty distinguishing the words we cannot anticipate, especially in a noisy setting. Therefore, the less we expect one or another signal, the more distinct the signal should be for us to recognize it correctly.

The anticipation impact can be shown on a higher level, the level of semantics. It's night, and everybody in the house is asleep. Suddenly someone knocks on the door. The sleepy homeowner asks, "Who is it?" And the voice behind the door asks back, "Do you need firewood?" The homeowner says, "No!" When he wakes up next morning and goes to the backyard, he discovers his firewood stack is gone.

Another story is connected with Pavlov. During one of the conferences in Pavlov's memory a presenter was going though evidence in support of Pavlov's atheism. The presenter was trying to argue that Pavlov's affection for some religious ceremonies was nothing but a stereotype feature having nothing to do with his actual outlook. The memoirs of a young employee in Pavlov's laboratory were presented as a proof to support this theory. The employee recalled staying late one night in the laboratory with Pavlov and addressing him with a question he had always wanted to ask: "Ivan Petrovich, do you really believe in God?" Pavlov responded: "What do you take me for—a fool?" The presenter was sure that this "evidence" supported his theory about Pavlov's atheism (Pavlov, 1967).

It is difficult sometimes to concentrate on something, and it is also not easy to switch from one thought to another, to stop thinking about the problems that seem to be already rooted in our consciousness. Try not to think about a white monkey, and you will see that the harder you try not to think about it the more you do. Our attention is not familiar with the word *no;* it sticks to positive thinking instead. Imagine you are carrying a tray full of dishes, and someone gives a friendly reminder to be careful with it: "Don't drop it!" Suddenly something goes wrong with your motion coordination and you feel you are losing your balance. Why? Once we hear the message "Don't drop it," we clearly perceive the word *drop*. We then somewhat imagine what *drop* means. And for a moment our attention is caught by this idea, and our response consists of several parts, including spasms corresponding to the action "drop something."

To switch to another thought means to find another object of attention and to create a positive response to it. It has been determined that our attention is rhyth-

mic in nature. We can easily keep an object in the center of our attention once we find the ideal, best-fitting rhythm. And if we follow the rhythm, we will feel how easy it is to manage the attention. To master attention management one should follow an exercise routine consisting of concentrating and switching attention, frequently by using meditation.

One efficient means of enhancing attention is sticking to orderliness, the sequence of actions that helps us reach the goal. From their own experiences people have a series of procedures, recipes, or scripts that they prefer to follow. But the majority of us are not aware of the existence of these scripts, and so we keep following the behavioral patterns that previously proved effective. But situations undergo constant modifications, and one must learn how to create structure and order from scratch. To do so, one should study various existing behavioral and organizational patterns and learn how to work with them. The history of humankind is full examples: people were resolving billions of problems long before us, and their successful solutions contribute to structuring our cultural experience.

Construct imagination

"We are what we pretend to be."
Kurt Vonnegut, American writer (1922–2007)

The development of leaders' imaginations boosts the creativity of their teams. Creativity potential is the ability to create new products, services, ideas, procedures, and processes that have value for the organization (Woodman, Sawyer, & Griffin, 1993). The need to connect creativity to the value of the final product is emphasized in contemporary research (DiLiello & Houghton, 2008).

The process of imagination is closely connected with memory and attention. Attention is needed to identify an object's details and to imagine it. Try to imagine a one dollar bill—an object you see almost every day—and you will realize that the image you have in your head is not at all complete. The preciseness of an object's image depends on how well you have studied the object and not on how often you come across it. Being attentive and obtaining a comprehensive image of an object serve as the basis for the enhancement of visual thinking and visual imagination. In this respect it is important to learn as much as possible about the objects around you. Do your best to create whole images of everything you hear, see, smell, taste, and sense. Preserving the image is a memory task. And the starting point for imagination is an object's image actualization. Some people are capable of imagining a vivid three-dimensional picture of an object (if they so desire), but others cannot produce any image at all. Some people think in images all the time, while others argue that "the mind's eye" is only a metaphor intended just to make our speech sound eloquent.

The more vivid the images in our head, the more intense our emotions and the more deep their motivation function. People have different sensor systems that they use during the process of thinking or reasoning. Visual learners work with images; audio learners work with words; and kinesthetic learners work with tactile senses. Once you find out which one is your priority sensor system, you will be able to enrich the images by using other channels as well. Try having a fresh view

of the world by alternating the sensor channel. First have a look at the colors, their vividness, the hues; then listen to the sounds; and, finally, listen to what your other senses say. Try creating images of events that you read or hear about. For example, when reading a novel choose a part to imagine in detail. Imagine the setting and the characters' temperaments and actions. Pick a specific observation spot and let the events proceed right in front of you. And then check how much more you are able to remember after reading a part in such a way.

Sometimes when you recall an image you may notice that a line of associations is connected with the image. As a rule, these are not random associations: they are reflections of your previous experience. There is a close correlation between visual images and emotions. Negative images can be devastating for your mood and may serve as distractions. Check which images make you feel sad and which ones give you inspiration. Try managing your emotions by imagining cherished events. The free-association test frequently used in psychoanalysis can be of much help when developing an idea. Just take a pen and a piece of paper and put down all the thoughts you have. During this time, you may not criticize; you need to temporarily disable your inner censorship program and just follow the thoughts going though your head.

The key feature of a well-developed imagination is active anticipation. Being prepared for the future depends on our ability to project, forecast, and anticipate the future (Bazarov, 2012). And it does not matter if our forecast is true and precise (it matters, of course, but not that much). What really matters is that we have a number of scripts for the future. Making probability prognoses is something we do not learn at school from solving math problems, to which there is always an exact, correct answer. Reality shows that we need to have an ability to envision future possibilities. Take doctors, for instance. If they do not start treating patients before the whole diagnostic procedure is fully complete, they often find that their prognosis is proved correct only when an autopsy is performed on the patient, who died because of the delay in treatment. A medical doctor starts acting when one of the diagnostic possibilities becomes more probable than another. And having made a decision and acted in accordance with this decision, a good medical doctor continues to investigate deeper, comes up with a narrowing choice of diagnostic possibilities, and introduces changes in treatment accordingly.

However, all our attempts to anticipate the future are not possible without goals. If people do not have goals, these goals cannot become a subject of inspiration for others. To illustrate the point, here is the example of John Kennedy, former president of the United States. In May 1962 he gave a speech that was broadcast by television to the whole country. At that time the U.S. economy had seen better days. Everybody was expecting him to dwell on fighting the economic recession and unemployment. But he, smiling as always, said that the goal of the United States was to have astronauts on the Moon by the end of the decade. This was a demonstration of a fabulous skill to set a goal that is hard to achieve on the one hand and very realistic on the other. Setting similar motivational goals is typical not only of political leaders but also of managers and executive leaders at any level.

In order to develop your skills in goal setting, try creating an image of yourself in your own head—an image of you doing or possessing something that

you'd really love to do or to have. You can imagine yourself wearing a new blazer or working over a new project or having dinner in your favorite restaurant. There are three crucial elements in this brain exercise: first, be attentive to detail by applying all your senses; second, imagine yourself getting pleasure while experiencing these imaginative situations; and, third, imagine a specific situation happening on a specific day. The image you create makes you concentrate on the goal, stimulates motivation, and provides additional stimuli. Start with small goals that are easy to achieve, and then move to more significant and more general ones.

A well-developed imagination allows for searching for objects' subtle characteristics. And the discovery of new, previously unknown characteristics brings about the invention of new objects. Percy Spencer, an American engineer, was the first to notice that microwave radio signals can warm up food, and sometime later he received a patent for a microwave oven. At the time of his discovery Spencer was employed by Raytheon, a radar-equipment manufacturer. Legend has it that while he was standing in front of an operating magnetron, a chocolate bar in his pocket melted (if it is not a legend, it is a pure miracle he did not get a deadly dose of microwaves). According to another version, he noticed that a sandwich warmed up after he left it on a working magnetron.

Another important skill based on construct imagination is visual thinking. The general approach to developing visual thinking is to refrain from studying existing cultural images and to start experimenting with the development and realization of new images. A wonderful source of visual-thinking development is life drawing, drawing from memory, or picturing abstract ideas. The creation of images is connected with a series of combinations and with applying accents. Combining means putting together separate elements of various subjects' images in a new, more or less unusual combination. Combining is not just relocating or regrouping elements, and it is not a mechanical matching of different objects' sides; instead, it is a process of making drastic changes to elements that are used to build a new image. The technique of applying accents is outlining one or another feature of an object (take an image of a giant, for instance). Applying accents can be done by means of highlighting, abstracting, and transforming some characteristic features of an object or phenomenon.

Creative imagination also enables one to take one of several features of an image and to apply this feature to another image. Many inventions were based on the creative transfer of an object's features. Leonardo da Vinci started by studying a dragonfly—its anatomy and its movement patterns in the air—and then he came up with a waving wing. A Polish architect, A. Karbowski, applied the bees' technique of building honeycombs in his residential constructions because honeycombs are an ideal shape for solid-cast constructions such as honeycomb panel walls, barriers, and radiators. And English inventor Percival Everitt designed a vending machine for matches that was an analogue of the "holy-water" vending machine invented by Heron of Alexandria (first century AD). Velcro—a hook-and-loop fastener working on the same principle as burdock—was invented in 1948 by a Swiss engineer, George de Mestral.

Willpower under Control

"Willpower is determination combined with the right reasoning."
Plato, Greek philosopher (427–347 BC)

Previous researchers have argued that an effective leader has high intrinsic motivation. In other words, leader make their own choices based on criteria of pleasure or meaningful purpose. Teachers with stronger intrinsic motivation exhibit leadership more often than teachers with less intrinsic motivation: they support independence and responsibility in students, provide more content and organizational information, help students, and thereby increase their involvement (Taylor, Ntoumanis, & Standage, 2008). The presence of motivation in leaders allows us to suggest that the component of "willpower under control" can make make a significant contribution to the efficiency of management.

Willpower is a human ability to achieve a consciously set goal while overcoming inner and outer obstacles. An act of will is an act that is performed in conditions where different stimuli, both positive and negative, are present. For example, a conscious rejection of food during a diet period is marked by hunger discomfort. During the process of making choices another inner process takes place, and this process is defined as an act of will. Experiencing willpower can be connected with the sensation of overcoming something, which can be prevalent in people who practice skydiving. At the moment before jumping out of the plane it is difficult for them to raise their arms; they barely move up and seem to exist just by themselves.

If there is no hierarchy of motivations and goals, then a person's willpower may be influenced by unconscious instincts. Such situations should be carefully considered on the level of consciousness, and a clear vision of one's values and corresponding goals should be reached. In order to understand the possible acts and goals, it may be helpful to answer a few questions:

(1) What are the factors (forces) that influence my actions?
(2) What here-and-now possibilities do I have for my actions?
(3) What may be the consequences of these or other actions?
(4) What are my desires and goals?

An act of will starts with the emergence of a motive expressed as an aspiration. While the corresponding aspiration-related goal is being perceived, aspiration transforms into desire; once there is a desire people find out what object can satisfy this need, based on their own experiences. And when the goal is clear, when a task is set to attain this goal, when a person is sure it is possible to attain it and is determined to master all techniques necessary to attain it, then this desire transforms into a real act of will, which in psychology is called a "wish." Wishing is not aimed at the desired object in itself; wishing is the determination to get the desired object, to achieve the goal. Wishing is possible only when not only the object but also the action leading to getting the object is desired.

Sometimes the aspiration and the goal setting are not followed by an action. Before an action takes place there may be doubt about the set goal or about the means

needed to attain it; and sometimes there are a few simultaneous competitive goals, or a person may think about the undesirable consequences of the actions needed to reach the goal, and as a result we have a stoppage. Reasoning and a struggle of motivations wedge in between the aspiration and the action. The problem of choice arises because one does not want to see alternative solutions or does not want to give preferences; doing so means setting aside other possibilities, which can be difficult for those individuals who never say "no" to anything and want to implement all possibilities at the same time. The problem of choice may also be exacerbated by the fact that many things can seem unpleasant. This is exactly the case when we put off making a decision and hope everything will work out by itself and we will not need to take any action. But, as a rule, nothing works out by itself, and given the time we have lost, it may be too late to undertake any actions. But is it true that we cannot anticipate the result of such a delay? Sometimes it is enough to seriously consider the probable consequences of the delay, and the desire to put off the errand vanishes.

The analysis of one's job from the perspective of negative emotional impact shows that only a small number of activities cause such a disturbance. If you make it a rule to deal with these unpleasant types of activity in the beginning, you will drastically reduce the number of work-related responsibilities that are piling up. It is best to deal with them in the morning. In this case you will no longer follow "the road to Calvary"; you will have a sense of accomplishment for the whole day, together with pride in yourself for your strong willpower. Finally, if a task is unpleasant to you, promise yourself a reward for successfully accomplishing it on time. The reward can be a movie, a walk in the city, or anything that gives you pleasure. It is important to follow two rules in this connection: first, you should not reward yourself if the terms and conditions were not met in full; second, you should not allow external factors to deprive you of a reward you have honestly earned.

Moreover, the inability to make choices can be exacerbated by a person's goal to always make everything right. Such a goal deprives you of the right to make a mistake. The desire to ensure that nothing bad happens leads to a never-ending process of gathering information, consultations, meetings, and deferrals. You should not forget that in the end you need to take action. The right time to take action is when no new information can have an essential impact on the quality of the decision. It is useful to develop the habit of choosing the best solution you can at the moment and to consider it satisfactory. An efficient cure for indecisiveness is to make a "list of concerns" in which you include all the obstacles that you may encounter on the way to achieving the goal. Have a look at this list from time to time and mark what has really happened. Probably most of your concerns were mere products of your imagination, and remembering this exercise will help you take new, more risky steps in the future.

An important aspect of an act of will is fighting bad habits. All people have their own bad habits. But changing these habits is a long and complicated process. To start working on the habits that impede successful performance of your task make a list of errands and responsibilities you are used to postponing both at work and in everyday life. Usually, studying such a list will reveal some consistent patterns in your behavior. In addition, when we undertake a new task, we have to overcome a more or less powerful urge toward nonaction. But we should remember that ac-

tions have momentum. It is much easier to continue a task you have started than to just start. Hence, a piece of practical advice: when undertaking a complex and not-so-pleasing task, start with the easiest step, the one requiring the least amount of effort, and then tackle harder steps.

Big gains can be achieved by overcoming your habits through competing with yourself by means of game. For example, you can have a look at how many different tasks that you a prone to postponing you can complete in just one day and where you can find some time to do so. Gradually, this game can become a habit; your personal score will start growing, and there will be a moment when you realize that coping with your job has become much easier and more interesting than before and that you are more tranquil when finishing a project. Moreover, you are now using your time in a more efficient manner than before, and you are much less tense.

Executing a decision requires such qualities as a clear and firm understanding of the goal, single-mindedness in pursuing the goal, vigor, persistence, and self-restraint. By "self-restraint" we should understand the readiness and the ability for some time (and sometimes for a long time) to abandon other goals and plans; and we also should not to be carried away by the means used to reach the goal so that the means do not become goals in themselves and so that we do not become committed to one means only. The amount of energy used to achieve a goal can generally be maintained through confirmation and command of oneself ("so be it"), while persistence can be developed through the technique of keeping the center of our attention on a clear mental picture or image. It is here that all three psychic components meet: willpower, attention, and imagination.

According to research studies, the feeling of overcoming something when accomplishing an act of will is connected with muscle tension. It lies within the nature of the effort. It explains why after accomplishing an act of will we feel as though we have done an immense amount of work even though in fact it may have been a relatively easy task. It's because the work was done in our muscles without preparatory toning; it was done contrary to toning. Adaptation encompasses not only rational, mental activity but also physical activities that allow us to stimulate the groups of muscles necessary to accomplish a willpower action.

Bruce Jenner, an Olympic decathlon champion, equipped his room with a bar resembling a jumping bar, and for four years whenever he sat down on the sofa he glanced at the bar and imagined jumping over it. Every time Jack Nicklaus, a golfer, wanted to play a stroke, he imagined the whole process and watched it as if it were in a movie. In his mind he saw not only the spot where he wanted the ball to land but the flight path as well.

There is a story about some tourists who were watching a small animal called a mongoose. They described its weird behavior in the following way: the mongoose would spend hours in a glade practicing some tricks and stunts. The tourists could not understand this behavior and its purpose. Norbert Wiener, the founder of cybernetics, later interpreted this strange behavior, which he called "the mongoose dance." He suggested that the animal was fighting an imaginary cobra. And it was always fighting in such a way as to win the battle. A real cobra encounter for the mongoose was just one of the battles it had practiced before. That is why a mongoose always wins.

The implementation phase requires planning the action. In the majority of cases we postpone starting a difficult task because we are not sure where to begin. The only solution is to divide the task into several parts, and the more little parts there are, the better. How to divide a difficult task into parts? It is best to start from the end. Analyzing the parts usually helps a lot with finding the first step, which will constitute the base for the final success. Another advantage of dividing the task into parts is that you can plan your tasks in advance and every day pick the time to complete one or another small part without interfering with other tasks. If you decide to follow this method of accomplishing one small part everyday, you should also follow two important pieces of advice: (1) always rank even the smallest and seemingly most insignificant parts in order to complete the most important ones first; (2) while accomplishing an array of small parts, analyze the whole scope of the work once again; this exercise may you help find quicker routes to achieving the final goal.

When dealing with unpleasant tasks it is useful to set a deadline: its preciseness will help you to overcome sluggishness and to start working. But do not forget two conditions: first, the deadline should be realistic so that you have enough time to perform an unpleasant task without nervous haste; second, the deadline should always be in plain view—underneath the glass panel of your desk or on a special card in a paper clip or on a special piece of paper attached to the wall in front of your workplace. It may be beneficial to let other people know about the deadline—your employees, secretary, relatives, friends. The fact that they may see you as an unreliable person if you do not meet the deadline will discipline you much better than simply reporting to yourself. When making a decision you feel that the sequence of the events that follow depends on you. Realizing the consequences of your actions and the interdependence of your decision and ensuing events brings about the sense of responsibility typical of an act of will. It is important to feel the responsibility and to get the job done. Accepting responsibility is also a question of morals and ethics: What are you ready to sacrifice in case of misfortune: money, reputation, status?

Experimental research on willpower development in children has revealed some paradoxes (Petukhov, 2002):

(1) Acts of will take place more often when the object we need (something we want to get for our work) is in our imagination rather than when it is within reach. During the experiment the children performed senseless actions more often when the reward for their behavior (a more interesting game) was hidden in the closet rather than when it was lying in front of them.

(2) Acts of will take place more often if a person, not a setting, gives the impetus for the actions. During the experiment the children reacted to a request from an adult to perform senseless actions more often than they reacted to the game's rules about performing such actions.

These features, typical of acts of will, can be seen also in adults' behavior. For example, when there are no requests from the immediate surroundings, a self-command is performed.

An officer's valet is dawdling and keeps groaning and whimpering all the time. The officer asks him:

> "Ivan, why are you groaning all the time?"
>
> "I'm very thirsty."
>
> "So go and drink."
>
> "I don't want to go."

After some time the officer tells him in a commanding voice: "Ivan." "Yes, sir?" responds the valet. "Fetch a glass of water." The valet quickly fetches the glass of water. The officer says: "Drink it." The valet drinks it up and settles down. (Leontyev, 2001, p. 480).

Lack of time results in a quantitative increase in work, but the quality decreases and attention focuses on vital problems; there is a predominant tendency to follow simplified procedures in making choices. In a situation like this complex forms of activity management may give way to simple ones. A person switches from controlled and sensible judgments to intuition; selectivity in choosing the source of information rises. And actions proceed parallel to each other; hence, "multiactivity" or "multichannel activity" appears.

Summary

The peculiarities of the present-day social situation are virtualization, multiple identity, and total immersion in an external sociocommunicative environment. In order to adapt to this reality, one should develop such psychological skills as construct imagination, extra-voluntary attention, and control of willpower. Among the peculiarities of the "executive view" in the postcrisis era one can discern self-adjustment, common sense and intuition acting as a whole, and the readiness to make choices in fifty-fifty situations.

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PSYCHOLOGY OF EDUCATION AND LEARNING

Vygotsky under debate:
two points of view on school learning

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Vygotsky's name has never been so evoked as it is at the present time, yet the educational scientific community faces an awkward situation. On the one hand, his works have been used as the basis for certain socioconstructivist school reforms that he would surely have completely disapproved of (Vygotsky, 1934/1987, p. 211). On the other hand, the recent collection of his writings (Yvon & Zinchenko, 2012) and other works (Brossard, 1999, 2004; Schneuwly, 2008b) lead us to another interpretation, in which the internal evolution of didactic content is at the forefront of Vygotsky's precepts. Therefore, although it is unpleasant, we are confronted by different points of view on Vygotsky's work that need to be investigated and exposed. This article sets out to achieve that objective.

Keywords: child's intellectual development, school learning, interpretations of Vygotsky's work

Two Interpretations of Vygotsky's Work

The first interpretation of L. S. Vygotsky's work can be found in Wertsch (1985), Cole (1985), Rogoff (1991), and Bruner (1983) and has been developed in Anglo-Saxon countries; it gives priority to a social analysis of Vygotsky's writings. The thesis of the complementarity between Jean Piaget's and Vygotsky's works is often adopted (Rogoff, 1991). If Piaget established as a theoretical basis that the cumulative and progressive construction of the mental structures of knowledge takes place as a result of the lone child's interaction with objects, Vygotsky, with his concept of the zone of proximal development (ZPD), depicted the integration of others in the child's knowledge construction; he also created a theory of the teacher's activity, which stimulates the child's development and supports the child in knowledge conquests, thereby accelerating future or budding conquests (Bruner, 1983).

The work that permits these researchers to set up such an interpretation is *Mind in Society* (Vygotsky, 1978). This book compiles extracts of texts written by Vygotsky at different times and enables a combined reading of his works that presents what can be considered an original and innovative theory. The presentation testifies to the coherent unity of the Russian psychologist's research work. However, Vygotsky emerges from this text as a social interactionist, and the reader is led to reflect on the possible effects of the interaction between a mother and her child on the child's learning.

A citation can be used to support this perspective. It is taken from Chapter 5 of *The History of the Development of the Higher Mental Functions* (Vygotsky, 1931/1997), which Vygotsky reproduced in a late text (Vygotsky 1934/2012, p. 241) and of which only some parts were taken to constitute Chapter 6 of *Mind in Society*:

> Every higher mental function was external because it was social before it became an internal, strictly mental function; it was formerly a social relation of two people. The means of acting on oneself is initially a means of acting on others or a means of the action of others on the individual. (Vygotsky, 1931/1997, p. 105)

Out of this citation have come the understanding and articulation of the higher mental functions as having a social origin. Therefore those reading the citation could find it necessary to investigate which social conditions allow and favor the intellectual or cognitive development of the child. Without adding any more information, Vygotsky's argument can be legitimately interpreted as an invitation and an encouragement to continue a research program that he would certainly have designed and that he couldn't carry out because of his premature death. Many Anglo-Saxon researchers have intended to continue this research program by developing a sociocultural approach to the psychological development of children (for example, Wertsch, del Rio, & Alvarez, 1995).

Nevertheless, this interpretation is founded on only one notion (the zone of proximal development) and one book (*Mind in Society*). It can be discussed, even debated, on the basis of an analysis of *The Collected Works of L. S. Vygotsky,* whose six volumes appeared in English between 1987 and 1999 (and between 1982 and 1984 in Russian). In this collection, we have the full texts of Vygotsky's works, in which we can see the diversity of his topics and the unfinished character of his works. On the basis of reading these texts, another (second) interpretation has emerged.

Pursuing this line of investigation, we can define several stages of the evolution of Vygotsky's thinking about the development of higher mental functions (Minick, 1987). Based on significant reappraisal, three different phases have been proposed (Chaiguerova, Zinchenko, & Yvon, 2012). The first phase is centered on the instrument. A paper about this premise was published in 1928 in the Russian journal *Pedagogy*, then translated and published in English the year after (Vygotsky, 1929/1994), and recently translated into French (Vygotsky, 1928/2012). Works related to this stage have been compiled in *The History of the Development of the Higher Mental Functions* (Vygotsky, 1931/1997). In the second phase an interfunctional relationship of higher mental functions is suggested; although Vygotsky re-

lates this work to the separate examination of mental functions, in one of the last chapters he demonstrates that these functions make up a system. As a result, a new version of the research program is succinctly set forth in *On Psychological Systems* (Vygotsky, 1930/1997). This program is extended in a posthumous text (Vygotsky, 1934/1960), on which Luria claims to have based his research in neuropsychology (Zinchenko & Pervichko, 2012).

Finally, a third phase, discernible from 1932, is characterized by the importance of language and semiotic processes as an explanation for the genesis of consciousness. Chapter 6 of *Thinking and Speech* (Vygotsky, 1934/1987) proposes a synthesis, based partly on Sakharov's work (1930/1994), of the development of children's thinking as a process of the internalization of declarative concepts and, as extended in Chapter 7, the exteriorization of thought in language.

Approached in this way, the central theme is maintained from beginning to end: the emergence of consciousness and the role of social interactions are to be understood as a backdrop, never as a primary subject (Schneuwly, 2012). This second reading places the transmission and the internalization of declarative concepts at the center of Vygotskian studies. The French-speaking scientific community has contributed particularly to this chronological reading of these texts (Brossard, 2004; Schneuwly, 2008a, 2008b; Yvon & Zinchenko, 2012).

Consequently, we find ourselves confronted with two different readings of Vygotsky's work. This controversy is quite healthy and allows for renewed reflection on Vygotsky's research. In addition, we face a debate between two conceptions of education: a school that transmits knowledge or a school that seeks to rearrange learning situations in order to permit pupils to learn as agents with their peers' collaboration. When situations are rearranged in this way, the pupil's activity is based on the resolution of authentic problems that challenge and raise intelligence. The protagonists of these two interpretations work in different geographic areas and also in different languages. This simplified distinction between Anglo-Saxon and French studies (Brossard & Fijalkow, 2008) merits a Russian mediator.

It is tempting to take this stimulating debate back to its original context, the USSR. What was the interpretation of Vygotsky's work, particularly in the pedagogical field? A first clue can be immediately identified: the texts that compose *Mind in Society,* published in 1978, on which the first interpretation was founded, were carefully selected by Alexander Luria, who had an excellent knowledge of his "mentor's" texts. So, the sociocultural interpretation was, if not guaranteed by Luria, at least prepared, even anticipated, by him. If we integrate Stetsenko's (2002) texts into the debate, thereby expanding the discussion about the complementary relationship between Piaget and Vygotsky to Zuckerman (2007), a colleague of V. V. Davydov, who proposed an interactionist analysis of the ZPD, we enrich the debate and grant a certain advantage to a sociocultural interpretation of Vygotsky that was supported and developed in Russia as well.

Have we really read Vygotsky incorrectly? In order to answer this question, it is necessary to make a detour through the genealogy of his ideas in an attempt to approach, as faithfully as possible, the immediate posterity of Vygotskian views on education and pedagogy.

Four pedagogical movements claiming to adhere to the Vygotskian tradition can easily be identified:

1) Developmental Learning Theory (the Elkonin-Davydov System) (Davydov, 1986/2008)

2) Concept Formation Theory of N. A. Menchinskaia (Bogoyavlensky & Menchinskaia, 1959; Kabanova-Meller, 1962)

3) Orientation and Programmed Teaching Basis (Galpérine, 1966; Talyzina, 1980)

4) Teaching system of Zankov (1977a, 1977b)

Hereafter, we will settle specifically on the first two theories, always focusing on the debate between a sociocultural interpretation of Vygotsky's work and an interpretation focused on instruction and transmission.

Developmental Learning Theory (the Elkonin-Davydov System)

Davydov seems to have discovered what his thinking owed to Vygotsky when he reedited in 1991 a text written by Vygotsky in 1926: *Educational Psychology*. This reading allowed him to find several pedagogical principles that he shared with Vygotsky: collaboration in class and the notion of the ZPD. He notes, "According to Vygotsky, a teacher can intentionally bring up and teach only through continual collaboration with them [pupils] and with their social milieu, with their desires and readiness to act together with the teacher" (Davydov, 1995, p. 17). The collaboration between an adult and a child is a factor of development. Such an interpretation of Vygotsky is very close to the sociocultural approach.

Now, some elements of this approach have to be emphasized. Davydov's affiliation with Vygotsky passed first through Elkonin, who, in collaboration with Vygotsky, developed research about the role of the game in preschoolers (Elkonin, 1989/1999). The Elkonin-Davydov system exploits this work, taking the game as a model: in a game, children let their imaginations fly, following their own wishes, and they thereby appear to enjoy complete freedom (Davydov, 1986/2008). The Elkonin-Davydov teaching system uses the game as a pattern for activity by setting up the learning conditions in such a way that the activity of learning acquires the same properties as the game. In so doing, Davydov and his colleagues transposed to school-age children a process of learning that Vygotsky reserved for preschoolers (Vygotsky, 1933/2012). This learning system consists of creating the illusion that the children follow their own programs when in fact they follow a program that has been arranged within a specific curriculum. Thus, the reference to Vygotsky's work is made at the expense and through the erasure of the specificity of learning at school age.

In a very tight discussion, Davydov (1972/1990) analyzes Chapter 6 of *Thinking and Speech* and argues for the significance of the distinction between scientific concepts and ordinary concepts. Scientific concepts are not "really" scientific: they are taught concepts, formalized for teaching and held to their definition. They are not real concepts, as they exist only in language. On the contrary, ordinary concepts can be said to be systematic.

From this point of view, there exists in Vygotsky's work a generalization by induction versus a generalization by the systematization of settings on the logical coherence of experience (scientific theory). Davydov rejected this statement because the scientific concept conceived by Vygotsky is a scientific generalization, while the kind of generalization that Davydov refers to is a generalization in the activity. It is important then to find the "good" activity, in which the pupil is able to produce this spontaneous generalization. Davydov (1972/1990) reproaches Vygotsky for his nominalism and eliminates the conception of the transmission of scientific concepts that permit children to access the next stage of their imminent development. Davydov judges this position as incompatible with an activity theory in which he places his work as a legacy from Leontiev via Galpérine. He turns then toward S. L. Rubinstein and Piaget in order to propose an operational learning theory.

Therefore, our interpretation is clear: the work about teaching and about the conception of an alternative curriculum is supported by an activity theory specific to learning. In fact, it is incorporated into the Kharkov School and Leontiev's work. Later, for obscure reasons, Davydov (1995) tried to take advantage of the growing interest in Vygotsky's work by clearly proclaiming himself to be his successor from the point of view of educational themes.

However, a detailed review of his intellectual itinerary, of his work, and of his theory reveals to us many differences. It is an adapted Vygotsky that Davydov presents in those texts read by Anglo-Saxons. This confluence occurs outside the reading of Chapter 6 of *Thinking and Speech*, residing rather in a decontextualized interpretation of the ZPD; this interpretation is disconnected from the problem of the transmission of academic knowledge, and it makes the ZPD a social space where the actions of the teacher and peers is interpreted as an activity of sharing that guides the child's discovery of the objects of knowledge. This understanding is made possible totally on the basis of *Mind in Society* (p. 26) but does not stand up to a chronological reading of *The Collected Works of L .S. Vygotsky* and of *Thinking and Speech*.

That an author can be the object of multiple interpretations is quite correct and necessary. The literature provides evidence of a proliferation of thinking around Vygotsky's work, and nobody would find this proliferation regrettable. It is certainly a source of creativity and innovative ideas. Nonetheless, it is more problematic to take hold of authors and make them assume positions that they themselves would refuse. Internationally, Vygotsky's name is so recognized that it is enough to invoke the memory of a "cursed" psychologist, as we can invoke the names of painters or poets who were criticized and insulted when alive and whose deepness we sadly discover only many years after their disappearance.

Is another interpretation of Vygotsky possible? We referred earlier to Zankov's teaching program; although unfamiliar in Europe, it was officially recognized before the Elkonin-Davydov system. Galpérine's program is more familiar to most researchers, but we do not have the space here to demonstrate that this educative framework owes more to activity theory and to the concept of psychic reflection than to the ontogeny of the mental functions of the child through the internalization of social instruments. So, to further our debate, we will briefly describe the work of Menchinskaia.

Concept Formation Theory

The situation of Natalia Menchinskaia (1905–1984) is somewhat unusual. She is not very well known in the West. She was nevertheless a member of the editorial board of the review *Soviet Education,* which became in 1991 *Russian Education and Society*. She also headed the primary-school section of the Methodological Teaching Council of the Ministry of Education of the USSR and led the Laboratory of the Psychology of Learning and Intellectual Development in the Psychology Institute for almost forty years. Unlike Davydov, she worked directly with Vygotsky and completed and defended, under his supervision, her dissertation on the development of schoolchildren's arithmetic skills. A certain mystery surrounds her if we look at the existence of her work outside Russia: she was one of the founders of educational psychology in the USSR, but we can find only a few of her texts in foreign languages.

It would obviously be too easy to dwell on these respective indirect and direct associations with Vygotsky in an attempt to declare whether Vygotsky's works were inaccurately or faithfully appropriated. We are more interested in comparing and measuring the difference between Menchinskaia's works and those of Davydov.

These scholars use the same references, but are their interpretations different? If they are, uncertainties and hesitance in the comprehension of the texts of Vygotsky would also exist in Russia because they would reflect the same tension as that existing between the French approach and the Anglo-Saxon one.

The works of Menchinskaia were severely criticized by Davydov and Galpérine (Iakimanskaia, 1996). In fact, she stayed away from the activity-theory mainstream (Menchinskaia & Saburova, 1967), and for this reason her works suffered from having less exposure abroad than those of her contemporaries. She was also attacked for the empirical character of her methods (Iakimanskaia, 1996).

By reading Menchinskaia's article published in 1966 in *Psychological Research in the USSR*, we can understand why it provided ammunition for her opponents: Menchinskaia accumulated considerable amounts of research data, but the results are difficult to generalize. The disordered character of these results can destabilize and disconcert readers compared with the results of other Russian authors. More precisely, it is not easy to discover a systematic theory of teaching in her works, and it is very possible that she did not develop one.

Thus, she was not a theorist but a researcher trying to accumulate data in order to enhance her understanding of school-age developmental processes. Furthermore, she adopted a starting point opposite that of Davydov while she was trying to further her comprehension of what was happening in pupils' minds. Relying on the title of one of Vygotsky's late articles, we could qualify her work as the pedagogical analysis of the pedagogical process (Vygotsky, 1933/2012).

What was her research program and its object? They are very often explicated in the simplest possible way: to discover the laws of the assimilation of knowledge in the process of education. Her goal was to follow the process of assimilation (*usvoenie*), a concept that she introduced into Russian psychology (Iakimanskaia, 1996, p. 80).

We therefore must compare her research with the research program established more or less by Vygotsky at the end of his life:

Pedagogical analysis will be always oriented towards the interior and will be like research using Roentgen rays. It must clear up for the teacher how the processes awaken[ed] by school teaching take place in the mind of each child. To discover this internal genetic network of school disciplines is the first task of pedagogical analysis. (Vygotsky, 1934/2012, p. 246)

It's impossible not to recognize Menchinskaia's research object in Vygotsky's quotation. She indeed endeavored to follow, as much as possible, the internal processes and the stages of the assimilation of school knowledge in the mind of every child.

She started a systematic cycle of studies investigating the problem of the relationship between instruction and intellectual development, designed to discover the actual mechanism by which the subject content that is provided by instruction is turned into individual knowledge, abilities, and skills as personality formations. (Iakimanskaia, 1996, p. 80)

For this purpose, Menchinskaia proposed to distinguish among concepts such as teaching (*obuchenie*) and learning (*uchenie*) (Iakimanskaia, 1996, p. 79)

Nevertheless, it is difficult to discover these famous laws of assimilation in a formalized way in her work. Rather the work produces descriptions and highlights the variability of the processes and their dependence on the child and the subject content. The variability of the data prevails over their systematization: a step described by her contemporaries as empirical, as we have seen.

She seems to restore Vygotsky's program from where he left it: to follow the effects of formal learning in child development:

The task of the specialist in pedagogy who analyzes the subject of the natural sciences is not to check what the child understood or did not understand from a lesson. His task is to show the ways of the interior process of the development of concepts in one or another discipline by which the child has to pass under the influence of the teaching of the social sciences or the natural sciences. (Vygotsky, 1933/2012, p. 166)

While following the process of the assimilation of didactic material closely, Menchinskaia was faced with the difference between learning and intellectual development: children learn scientific concepts, are able to recall them and use them during an examination, but, in natural situations, in fact, ordinary concepts are mobilized. For example, a child who is asked to draw a right-angled triangle will represent it with a right angle at its base. If it is presented differently, the child, who attaches importance to the typical representation of the geometrical figure rather than to its essential characteristics, cannot recognize it: a square represented by its top is taken for a rhombus, and a straight line is always horizontal. Thus, the mechanism of assimilation of the subject content lets us see a gap between school learning and true assimilation. The work of Menchinskaia provided evidence of these defects of assimilation and of differences in assimilation depending on the teaching method.

One of the reasons for this gap is the constant conflict between scientific concepts and the ordinary concepts used and learned by the child outside school: academic knowledge does not replace daily representations. Sometimes, "spontaneous" knowledge enters into competition with school knowledge; sometimes they even coexist: the pupil mobilizes academic knowledge to answer questions on an examination, but, in a natural context, the pupil continues to use previous associations. However, according to Menchinskaia, "[these] facts … are the direct extension of the work undertaken by L. Vygotsky and his collaborators on the problem of the dialectic of scientific concepts and empirical concepts" (1966, p. 359).

This tension between academic concepts and the concepts of everyday life is also illustrated by difficulty in distinguishing essential properties from secondary characteristics. For example, Menchinskaia found in her studies that concrete content is often an obstacle to the assimilation of academic knowledge. An experiment with a control group showed indeed that the group that had the advantage of direct and abstract teaching succeeded better in solving exercises than did the group that obtained strong empirical scaffolding during the lesson. Abstract learning made it possible to structure thought and to orient it toward the resolution of problems. Such facts directly contradict Davydov's proposal to place school students in a problem situation in which the solution bypasses the formulation of an abstract principle. According to Menchinskaia's research data, one does not facilitate schoolchildren's learning by doing that but by making the problem situation increasingly complicated. The assimilation does not go from the top to the bottom but follows a complex path. "There is a movement that happens simultaneously in two opposite directions: the object towards the word and from the word to the object, i.e., the abstraction and the concretization take place at the same time" (Menchinskaia, 1966, p. 355).

The laws and the capacity for assimilation of school content are different from one child to another. It is irresponsible to propose the same method of appropriation for all pupils, who do not follow the same stages in their appropriation of knowledge. Menchinskaia thus set up and worked out strategies of learning that tried to compensate for defects in aptitudes. She developed tools for diagnosing the whole personality and not only separated functions.

One last aspect of her work deserves special attention: the development of thought according to subject content. The research program that Vygotsky set himself was to explore the internal processes of the development awoken by the learning of particular subject material (grammar, arithmetic, social sciences, natural sciences, and so forth). Therefore, it was important to take into consideration the disciplines and their characteristics in the assimilation of knowledge:

> Each school subject has a particular and concrete relationship to the development of the child, [a] relationship which varies as the child passes from one stage to another. That guides us to examine again the problem of the formal discipline, in other words, the role and importance of each particular material for the general intellectual development of the child. The problem cannot be solved by a formula [alone], but a vast field comes to light here to undertake concrete, wide and varied researches. (Vygotsky, 1934/2012, p. 247)

Therefore, Menchinskaia took up "the study of the more specific laws of the thought activity, conditioned by the contents of the taught material" (1966, p. 365). The meticulous examination of these works obviously exceeds the limits of this article.

The educational topics approached by Menchinskaia are diverse but nevertheless they concentrate especially on the question of the assimilation of school content and its variability according to the subject and the aptitudes of the child. Her work can be regarded as empirical but also atheoretical: in her work are references not only to Vygotsky but also to Rubinstein (the internal conditions) and Pavlov. Her endeavor is the opposite of Davydov's because she focuses her work on the distinction between scientific concepts and ordinary concepts. The whole meaning of this encounter is to know how to take into account the daily experiments of the child in school activities. On the contrary, Davydov did not subscribe to this distinction and sought to support another type of generalization that fits into the school activity of pupils and does not start from the knowledge transmitted by the teacher.

Conclusions

By limiting us to these two approaches of research, the conflict between several interpretations of the works of Vygotsky in educational psychology seems to have its equivalent in the discussions held by researchers in the USSR. One of the approaches has benefited from broad dissemination in the English language, whereas the other is little known outside the former USSR. One of them focuses on the assimilation of knowledge and fits into an outlook that could be called didactic. The other is focused on the activity of the schoolchildren and fits into an outlook that one could describe as psychopedagogic. Between these two approaches remain the works of Vygotsky, which we have to learn and read again and again in an attempt to unravel, as far as possible, the claim that he intended to make.

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Multimethod approach to measuring values in a school context: exploring the association between Congruence — Discrepancy Index (CODI) and task commitment

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There are considerable differences among the value hierarchies revealed by different methods of measurement. The quantitative measure of such a difference can be referred as the Congruence-Discrepancy Index (CODI). The more congruent the results of different methods are, the higher the CODI is. In the present study I compared value hierarchies obtained by the Schwartz Value Survey and an original instrument based on the constant-sum scale in two samples of adolescents (those in special schools for at-risk adolescents and those in ordinary secondary schools). The results show that the CODI for ordinary school students is significantly higher than that for adolescents recruited from special schools. A significant correlation between the CODI and school engagement was revealed for the ordinary school sample. The possibilities of using the CODI in value research are discussed.

Keywords: values, adolescents, measurement, value theory, ratings, rankings

Since the turn of the century the value theory proposed by Schwartz (1992) has become a widespread and dominant approach to human values. It is recognized as a unifying theory that suggests a comprehensive set of 10 types of values. The theory establishes nearly universal relationships among motivations that underline values and therefore provides an a priori model for verifying empirical data. Although the theory is supported by consistent results obtained largely from normative populations of educated adults (Schwartz, Melech, Lehmann, Burgess, & Harris, 2001), considerable deviations from the theoretical propositions were revealed in educationally and culturally specific samples (Schwartz et al., 2001). Schwartz and colleagues (2001) attributed such discrepancies mostly to the method effect. The method effect refers to the extent to which an instrument by itself affects the obtained results. Inconsistency was found between the findings from comparison studies of the value orientations of delinquent and nondelinquent adolescents. Several studies showed that delinquents and nondelinquents shared the same hierarchy of values (Romero, Sobral, Luengo, & Marzoa, 2001; Zieman & Benson, 1983), while others showed differences in value orientations between the two studied groups

(Goff & Goddard, 1999). However, sample characteristics and method effects were investigated separately in value studies. Method effects were extensively studied as a "ranking versus rating" issue.

One may propose that different methods that elicit personal values lead to different value priorities or hierarchies (Hansson, 2001). Comparison studies using ranking and rating methods have led to controversial results (Krosnick & Alwin, 1988; Maio & Olson, 1994; Rankin & Grube, 1980). In some of them discrepancies in value hierarchies gained by different methods were found, while in other studies using both methods led to similar results. Discussions of the issue have revealed the strengths and weaknesses of both methods. Some studies were aimed at assessing whether ranking or rating scales produce similar results and at determining which of the scales is preferable (Maio, Roese, Seligman & Katz, 1996), while others pointed out alternatives (McCarty & Shrum, 2000). Discussion of the studies resulted in the argument that each method might represent personal value systems in a specific way (Ovadia, 2004).

Most of the studies on the values domain have been carried out using a method for measuring values that does not allow for testing the above-mentioned hypothesis. In order to do so one has to investigate the differences between the methods that are responsible for the divergent results. Such differences may refer to the form of the instrument, the scale, the content, or the activity of the subject while performing the task.

In the domain of values, a number of studies have been carried out to compare the results obtained with different methods of measurement (Lindeman & Verkasalo, 2005; Schwartz et al., 2001). However, such studies were focused more on the convergence between the results gained by different scales than on the differences between them.

In triangulation studies the researcher adopts competitive methodologies (for example quantitative and qualitative approaches) dealing with the same phenomena (Jick, 1979). Such studies may deal with the common or overlapping variance of the methods as well as with the unique variance, which is often neglected. Triangulation studies of unique variance have a comprehensive and complete approach to the construct, evaluating it from different perspectives. The researcher aims to explain the discrepancies between the results of different methods that may shed light on the nature of the object under study. Such studies have been done in the value domain using a multitrait-multimethod matrix (Schwartz et al., 2001). In the triangulation approach the discrepancies between the results for different methods of measuring values can be examined as a separate independent variable. I suggest that the agreement or discrepancy between the results of several scales measuring the same construct (values) be referred to as the Congruence-Discrepancy Index (CODI).

Only a few studies have focused on the nature of the differences between methods for measuring values (Krosnick & Alwin, 1988). Obtained results have emphasized motivation and the investment of cognitive effort in performing the task as factors affecting the results gained by a particular method. In other words, the data stress the importance of accounting for the testing situation, or testing context.

Testing in the School Context

Adolescent research is usually carried out in the school context. It is often presupposed by researchers and educators that adolescents do their best (make every effort) to perform the tasks presented to them in testing situations. However, task engagement may vary depending on, for example, personal goals in the testing situation, the purpose of the task, and the perceived consequences (Pintrich & Schrauben, 1992). Students normally invest more effort in high-stakes tests (where the respondent considers the results or the consequences as important) than in low-stakes tests. The effort put into the task depends on whether a student is committed to performing school tasks in general. Engagement in school tasks relies on commitment to the school as an institution or authority (Fredericks, Blumenfeld, & Paris, 2004).

School commitment and engagement are considered to include components of behavior (learning effort) and affect (interest in and attitudes toward learning) (Finn, 1989). Students who are engaged in school life have intrinsic motivation and foster self-direction values (Marks, 2000; Shernoff, Csikszentmihalyi, Schneider, & Shernoff, 2003). In regard to gender differences in school engagement, girls are more likely to invest effort in studying than boys (Shernoff et al., 2003). Thus, school commitment may be measured using teachers' assessments of the motivation of students to achieve and learn.

Data from studies of delinquent adolescents are also relevant to the issue of school engagement. Some studies show that delinquents and nondelinquents share the same hierarchy of values (Romero et al., 2001; Zieman & Benson, 1983), while others show differences in the value orientations of the two groups (Goff & Goddard, 1999). Such inconsistent results may reflect method differences and relate to the testing context: whether adolescents invest effort in the task. In value studies task effort or engagement is rarely measured or identified. For example, if many items are missed in the rating task, we may conclude that the student did not invest enough effort in the task. But not all cases are so easy to identify.

Because rule-following can also be a measure of task engagement, a constant-sum (CS) task can be adopted to assess the value priorities of adolescents. As the CS task includes the rule that exactly 30 points must be distributed among 20 values, it is possible to consider mistakes as non-rule-following. The extent to which adolescents follow the rule relates to their motivation to perform the task. According to the literature (Jenkins, 1997), there are more non-rule-followers in special schools for at-risk adolescents than in ordinary schools.

What Is the Congruence-Discrepancy Index (CODI)?

The CODI indicates the difference or convergence of the results of different scales used to measure the same construct. In the domain of values it is considered to reveal the value hierarchy as a "picture," or representation, of a respondent's internal, personal value system. A personal hierarchy can be revealed by using any method in the research (ranking or rating). The rank-order correlation coefficient between the two hierarchies obtained by different scales is the CODI. The higher the CODI

the higher the agreement of the results of different methods, and the lower the CODI the higher their discrepancy.

In accordance with Krosnick and Alwin (1988) one may hypothesize that discrepancies between the results of different methods can be attributed to (1) the difference in the motivation of respondents to perform the task, (2) the low self-perception of respondents, or (3) their low ability to differentiate between values or the extent to which they have formed an internal value structure.

The following hypotheses were tested in the present studies:

Hypothesis 1: The CODI will be smaller (higher discrepancy) with low commitment to the school context (Study 1).

Hypothesis 2: The CODI, commitment to school, and task engagement will be related (Study 2).

Study 1

Sample

In order to test the discrepancy effect in two contexts that differ in commitment to school, two groups of students were recruited. The samples were intended to be different in motivation toward school tasks, self-perception, and value differentiation. The first group was recruited in a special Moscow school for delinquent adolescents. Most of the students had been put in that school because of antisocial behavior and had committed minor crimes. A group of adolescents (N = 25, boys = 17, mean age = 15.3) were asked to fill out both scales: CS and rating. The second group of adolescents was recruited in four ordinary Moscow secondary schools (N = 160, boys = 46%, mean age = 14.8). Students from two schools were asked to fill out a CS scale, and students from the two other schools filled out a rating scale.

Method

Constant-Sum (CS) Scale

The CS scale included 20 value items selected from the Schwartz Value Survey-57 (SVS-57) (Schwartz, 1992). A group of psychology students who had the task of choosing values that are important for adolescents conducted the selection process. In the CS scale, the respondent is asked to distribute 30 points among 20 listed values.

The CS method is different in several ways from a rating scale (Table 1).

Rating Scale

The rating scale included the same 20 items as the CS scale. The respondents were asked to assess each value according to personal importance on a 9-point scale from –1 (opposed to my values) to 7 (supreme importance). For further analyses, the data were recoded into a scale from 0 to 8.

The selected 20 values represented 8 motivational types of values according to the theory (Schwartz, 1992). Because of that I analyzed data on the single-items level.

Table 1. Comparison of Rating and CS Scales

Issue	Rating Scale	CS Scale
Task	To rate the listed values according to personal importance	To distribute points among listed values according to personal importance
Approach	Direct evaluations of each value	Dual activity: values prioritization and math task
Rules	To follow the scale limitations (does not provide the possibility for choice, does not have a measure of motivational involvement in the task performance)	To distribute a particular number of points (provides room for choice and an opportunity to assess involvement in performing the task when the number of points is exceeded)
Participants' activity (observation and interview)	Single value evaluations	Quasi-systematic, pair-wise comparisons
Scale	Scale effects (end-pilling, tendency to use middle points, etc.)	Participants construct the scale (different strategies are used: compromise and extreme)

Results

In order to test whether a discrepancy between the results on the CS and rating scales could be found, I used the correlation-vector approach (Jensen, 1998). The first vector represents the mean scores on the CS scale, and the second vector represents the mean scores on the rating scale. The rank-order correlations of the four vectors (2 Methods × 2 Samples) are given in Table 2.

Table 2. Correlation Coefficients Between the Vectors That Are Defined by the Mean Scores on the CS Scale and the Mean Scores on the Rating Scale (Special and Ordinary School Students)

Vectors	1	2	3
1. Rating scale (ordinary school sample)			
2. Distribution scale (ordinary school sample)	.60**		
3. Rating scale (special school sample)	.85**	.38	
4. Distribution scale (special school sample)	-.28	.35	-.30

**$p<.01$.

The correlation coefficients showed the correspondence between the value hierarchies of students from special schools and students from ordinary schools if measured by the rating scale. The value hierarchies of ordinary school students measured by the two methods appeared to be similar as well. The value hierarchies of special school students measured by two different methods were the opposite of each other (although the correlation was not significant because of the small

number of value items). This result can be explained mainly by the discrepancy in scores on "wealth": on the CS scale, students from special schools assigned greater importance to "wealth" than they did on the rating scale. No such differences between the methods were found for the ordinary school sample.

The correlation-vector approach showed the discrepancies on the group level. I wondered whether it would be possible to replicate that finding on the individual level using the CODI as the discrepancy measure. Adolescents with lower CODI (a larger discrepancy between the results of different methods) would tend to follow the path of the special school students, while adolescents with higher CODI (a larger congruence between the results of different methods) would be considered more socially adapted and committed to school.

Study 2

Sample

Two types of schools participated in the study: ordinary secondary schools and special "evening" schools. Evening schools support students who have been expelled from ordinary schools because of behavior problems and low academic achievement. In each school one or two classes were randomly selected for the study. In one of the schools, all classes from grades 8 to 10 took part in the study.

The sample of adolescents recruited in ordinary schools consisted of 215 students in grades 8 to 10 (mean age = 16.2 and SD = 1,1, girls = 54%), and in the special schools 99 students participated in the study (mean age = 16.0 and SD = 1.0, girls = 45%).

Method

Rating Scale

The rating scale comprised 20 value items. Each item was followed by a short explanation in parentheses. The respondents were asked to rate each item on a 9-point scale from –1 (contrary to my values) to 7 (great importance). In subsequent data analysis the scale was transformed to run from 0 to 8. Each of the 10 motivational value types was represented by two value items. The items were selected based on data on Russian adolescents obtained by Verkasalo, Tuomivaara, and Lindeman (1996). Only values that formed distinguished regions in the value circle and proved to have invariant interpretations across cultures were included. All the scores were centered on the individual mean to control for response style.

Constant-Sum (CS) Scale

The CS scale included the same list of values as the rating instrument did. The task for the respondent was to distribute 30 points among presented values according to personal importance. Each item was followed by a short explanation in parentheses.

Schwartz Value Survey (SVS)

The Russian version of the SVS-57 (Schwartz, 1992) was used. The survey consists of 57 value items. Each item is followed by a short explanation in parentheses. The

respondents were asked to rate each item on a 9-point scale from -1 (contrary to my values) to 7 (great importance). In subsequent data analysis the scale was transformed to run from 0 to 8. All scores were centered on the individual mean to control for response style (Verkasalo et al., 1996). Reliabilities of the scales were: power .69, achievement .64, hedonism .68, stimulation .49, self-direction .61, universalism .74, benevolence .74, tradition .63, conformity .67, and security .50.

Teachers' Ratings

Teachers were asked to assess each student on four criteria using a 3-point scale (1 — low, 2 — medium, 3 — high). Such a scale was chosen for its simplicity and the fact that it was not time consuming, as the teachers had to rate every student in the class on four criteria. Each student was assessed by two teachers: a class teacher (who is responsible for a particular class in which the student is studying) and a subject teacher (who is responsible for teaching one of the subjects). The mean score for each student was used for subsequent analysis.

The four criteria were the following (the description of the criteria provided to the teachers is in parentheses):

(1) Learning abilities (to what extent the student demonstrates the ability to perform school tasks)

(2) Learning motivation (to what extent the student is motivated to study, wants to obtain new knowledge)

(3) Moral behavior (to what extent the student follows moral norms, behaves according moral principles)

(4) Popularity in the class (to what extent the student is popular among classmates)

Results

I compared the results of the three scales (SVS, rating, CS) for two samples (adolescents from special schools and adolescents from ordinary schools) using the correlated-vector approach. Vectors were defined as means for the 10 motivational types of values. For adolescents from ordinary schools the results were congruent across all the scales (the lowest correlation between two different methods was .79; the highest was .95). The results for the sample of adolescents from special schools were somewhat different (Table 3).

Table 3. Correlations of the Results from Three Different Scales for Adolescents from Special Schools

	SVS	Rating	CS
SVS	—		
Rating	.86**	—	
CS	.85**	.57*	—

*p<.05. **p<.01.

The results of the correlation vectors for the special sample of adolescents showed that although there was a little difference in the results between the SVS and the two other scales, there was a larger discrepancy between the rating scale and the CS scale. Although the previous results (see Table 2) showed a negative correlation between the rating and the CS vectors, here they had a positive but still insignificant correlation. The reason for the correlation increase could be that in the second study students were recruited from a less severe delinquent sample than in the first study. In any case, the differences between the value priorities measured by the rating scale and the CS scale persisted for the adolescents from special schools and were close to zero for adolescents from ordinary schools.

I wanted to test whether such a discrepancy could be replicated on the individual level for ordinary students with different levels of engagement with school. I used teachers' ratings to identify students with a higher or lower commitment to school and computed a commitment score for each student. The commitment score was the mean of the sum of students' ratings on learning ability and learning motivation (as assessed by the teachers). I calculated for each student an individual CODI between each two of the methods used (SVS, rating, CS). The correlation between commitment score and the CODI are presented in Table 4.

Table 4. Correlations Between Commitment Score and the CODI

	CODI		
	Between SVS and Rating	**Between SVS and CS**	**Between Rating and CS**
Commitment score	.22*	.36**	.41**

*$p<.05.$ **$p<.01.$

The data showed that the larger the congruence between the measures the more committed the student was, as evaluated by teachers. The most sensitive to commitment was the CODI between the rating and CS scales.

I also tested to ascertain whether there was a relationship between task engagement (measured as rule-following in the CS task: the number of points above or below 30) and school commitment (as measured by the teachers). A significant correlation was found for boys ($r = -.39$; $p = .044$) but not for girls ($r = .11$; $p = .390$). The correlation showed that the more points above 30 the less committed the boy was according to teachers' ratings. The lack of a relationship between commitment score and task engagement for the girls may be explained by the fact that girls are commonly more committed to school than boys and so there is less variation in the girls' subsample.

Discussion

The study tested whether conceptually different methods for measuring values would affect the value hierarchy. A distribution task and rating scales were used to reveal the value orientations of adolescents. In order to increase the variance, adolescent subjects were recruited from different educational contexts: mainstream secondary schools and special secondary schools. The results show that value hierarchies were similar across measures for ordinary students and, in contrast, were different (in relation to the method used) for special students. The extent of congruence between the results of the two different scales were operationalized as the CODI.

The congruence in the results of different methods may be viewed as a function of task commitment. Although alternative factors influencing congruence (intellectual level or maturity) that were not directly examined in this study are possible, there are several reasons for studying commitment. Learning abilities and learning motivation are, in teachers' eyes, the sign of students' commitment to school as an educational institution, to its goals, requirements, and norms. In that respect teachers evaluate not student abilities directly but the ability of the students to take the role required by the school.

Students who are committed to school interpret measurement situations as important in the school context regardless of whether it is a low-stakes or high-stakes exam. Those students who have low commitment may interpret low-stakes testing situations as unimportant (they expect no external gains). However, to a large extent, value research has been conducted in normative settings and with committed (socially adapted) samples.

Committed students cope better with difficulties, while less committed students perceive difficulties as threats. In the study, I used three different value scales that varied in difficulty for the respondents. The SVS presupposed attention to careful evaluation of 57 items. The distribution scale expected participants to do quasi-pairwise comparisons between values. The rating scale was short and relatively simple. Interestingly, the rating scale revealed fewer differences in the value priorities of special and ordinary adolescents. The results suggest that using a distribution task in addition to the SVS would help to reveal additional information (the degree of congruence) and to evaluate the participants' commitment to the task. Comparing test-retest measures shows remarkable differences between the constructs.

Conclusions

1. The data achieved suggest that different methods for measuring the same construct may produce different results especially in a low-commitment context.
2. The more the student is committed to the task the more congruent are the self-report value hierarchies measured by different methods. Such congruence/discrepancy can be referred as the CODI.
3. Control for commitment to school in adolescent samples might increase the validity of the results.

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The role of reflection and reflexivity in the development of students' abilities

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This article analyzes different approaches to defining *reflection* and *reflexivity.* The mastery of intellectual operations reveals the role of reflexivity in the development of abilities. The operational aspect of reflection is emphasized in the article. The study is premised on the expectation that the effective realization of intellectual activities and the development of abilities determined by these activities are conditioned by adequate reflection on conscious acts directed toward the performance of educational-cognitive tasks.

The data from the experiment show that reflexivity as a personality trait is highly developed in students with high indexes of general intellectual operations. The research findings indicate the role of reflexive mechanisms in students' acquisition of intellectual abilities. The implications of these findings are discussed.

Keywords: activity subject, ability, reflection, reflectivity, development, intellectual operations

To define the role of reflexive mechanisms and to facilitate the acquisition of intellectual operations are the main tasks in developing abilities. In addressing these tasks, one needs to keep in mind two considerations. First, reflexivity as the basic element of subjectness[*] is part of its structure. However, the series of experiments reported here shows that the process of students' subjectness and of their development of abilities has been inhibited by a low level of reflexivity development in all age groups. There is thus a need to investigate in detail the process of reflexivity formation in learning activities.

Second, the process of acquiring abilities and intellectual operations in learning activities is based on mechanisms of reflexive analysis of that activity and its separate components (motivation, goal, personal meaning, information base, decision

[*]   I introduce this term in order to emphasize the essential property of subjects, a property that characterizes a subject's active beginning of an activity directed at achieving a goal.

making, program, and implementation). One cannot consciously and intentionally develop abilities without reflection. The process is determined by students' analysis of their own mental acts, by understanding when and how to use certain intellectual operations, and also by understanding the consequences of doing so. Learning through ability development is based on reflexivity of intellectual activity. Reflection helps students acquire higher mental functions.

Authors who are interested in investigating personality traits have often referred to reflection as a process. They understand reflection to include such phenomena as self-awareness, rethinking and revising one's train of thought while doing something and estimating cause-effect relationships based on actions, words, or deeds that refer to a series of interconnected events.

The term *reflection* (from late Latin *reflexio*—'bent back') means introspection, comprehension, estimation of premises and conditions during the course of a person's activity and inner life. In philosophy reflection has been differently defined. The English philosopher John Locke defined reflection as a source of special cognition when the observation refers to an inner act of consciousness, but a sensation has outer things as its object. For the German philosopher Gottfried Wilhelm Leibniz, reflection is what we experience when we place our attention on what is happening within us. Carl Jung made an attempt to conceptualize reflection in terms of ideas. He defined ideas as the reflection on impressions gained from without (Frolov, 1986).

Taking into account this diversity of views regarding reflection, one has to conclude that reflection is characterized in general by its orientation to our inner world. This world is experienced with diverse features and manifestations, such as emotional states and feelings, shame experiences, and acts of consciousness (Shadrikov, 2006).

My research emphasizes the operational aspect of reflection. I believe that the effective realization of intellectual activity and the development of abilities determined by this activity are conditioned by adequate reflection of conscious acts directed toward the performance of educational-cognitive tasks. A student's orientation to an inward plan of intellectual activity can lead to the increased effectiveness of this activity and its further development and to reproduction in other conditions and situations.

To better understand the nature of reflection and its role in the development of cognitive ability, it is necessary to address the analysis of thinking activity, in the course of which the reflection of single mental processes (intellectual operations) and their results are realized. In the works of the great Russian scientist, philosopher, and psychologist Sergey Leonidovich Rubinshtein, the nature of a mental process reveals itself in an action or an act that is oriented toward performing a task. The task includes the goal of an individual's mental activity, which is correlated with the conditions set by that goal. Having been directed toward a goal or toward the performance of a task, the mental act of any subject[*] is based on some of the subject's motives. The starting point of any mental process is usually a problem situation. Human thought operates only when it is directed by a need to understand something. A problem situation or an issue, a surprise or a perplexity or a contradiction

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[*]   By subject I mean any human being who is a source of activity.

initiates thinking as a mental process. The person's involvement in the thinking process is defined by the problem situation. Thinking is always oriented to problem solving (Rubinshtein, 1958). In line with these considerations we can conceive that the beginning of thinking has to imply its ending. Thus, a problem solution is an innate end of the thinking process. If the goal is not reached, the subject will feel frustration or lack of success.

The dynamics of thinking are related to the emotional well-being of the "thinking subject," whose mental state is tense at the beginning and is contented or relaxed at the end. Generally, real thinking relates to the whole psychic life of an individual. Because thinking is closely associated with practice and is derived from a person's needs and concerns, emotional phenomena and feelings, which are expressed in subjective experience and a person's relationship to the surroundings, are joined in any intellectual process and make it expressive. To follow Rubinshtein's view (1995), it is not the thinking that thinks but a human being, so feelings occur in any thought.

Here I refer to Rubinshtein to underline key points for further understanding what thinking is. The first point is that one cannot analyze thinking without the thinking subject. It is the human being who thinks, rather than the thought. The person is involved in thinking. The second point is that any thinking, because of its structure, is an action directed toward the performance of a task. According to Rubinshtein, the needs and deeds of a person, the goal (which is part of the task), and the conditions (that set the task) are the elements that constitute the structure of action. The third point is that thinking arises through consciously regulated operations, or, more exactly, it is shaped by a system of intellectual operations. And the last, fourth, point is that consciousness of the thinking process is provided by critiques and checking. Rubinshtein (1995) pointed out that the whole flow of thinking is determined by a subject's awareness of the task that is performed during the thinking process. This process is experienced as the system of consciously regulated intellectual operations. Here, thinking, in contrast to any thought that might arise in the process of thinking, is correlated with the task that has to be performed by thinking and with the task's conditions.

In line with these points I believe that thinking as a process refers to thought production. Here I mean the thoughts that are further operated on by the subject in his or her thinking. In this context it is important to mention some suggestions of Rubinshtein and I. M. Sechenov, whose works have had an enormous influence on understanding the nature of thinking and the process of problem solving. To Rubinshtein (1958) a raised problem, in the whole set of its objective properties and principles, is involved in new relationships and thereby in making new relationships and characteristics that are fixed in new understandings. Thus, a problem is likely to draw out new content and is likely to be turned every time onto a new side. This is close to what Sechenov (1952) outlined by saying that each turn of a topic and drawing out of content is a new thought. Hence a set of thoughts characterizes the content of a topic. All these processes generate psychic content. Undoubtedly this content is enriched at the expense of assimilating ideas, but these same ideas are assimilated productively if they are associated with perceptions.

To enrich the content of an action or deed, thinking works with psychic content, which might be consciously or unconsciously conceived. This work is done by using intellectual operations. The process is characterized by motives, goals, and by programming, decision-making (working with schemas), checking, and controlling processes.

In analyzing thinking as a psychic process I have intended to show that if one takes reflection out of thinking, it could be dissolved. So it is not possible to consider reflection as a separate process that is isolated from thinking. Thinking is not thought itself (it is not thinking about thinking). It operates as a mental function of the thinking subject and solves an important problem for him or her. The subject, by organizing mental activity, is aware of the problem-solving process and is guided by the idea of a result. Because the problem is solved by thinking, the subject becomes aware of the course of thought that is associated with the problem solving. So the subject learns to organize the course of his or her thoughts and to control them in accordance with the task conditions. This process is illustrated by the study of mathematics. The teacher of mathematics lessons trains students to learn. The generalized ability to track ones actions (mental and practical) and to determine their correctness turns into a personality trait. So we can assert that there is such a (generally acquired) personality trait as reflexivity.

Reflexivity is a personality trait that promotes the successful implementation of any activity by directing, organizing, and governing thinking. The person governs task performance and the course of his or her thoughts through reflexivity. Here I am concentrating on intellectual reflection, which reveals the course of the realization of the thinking processes. This type of reflection concerns knowledge about its object and methods of interacting with it. Intellectual reflection has been studied mainly in such fields as pedagogical and engineering psychology in connections with problems of organizing the cognitive processes of information processing and the development of ways of teaching how to solve typical problems.

Intellectual reflection forms the basis for the development of abilities through awareness of the mechanisms of implementation of one's intellectual operations and through generalizing the experience of their application in problem solving. To determine the influence of reflexive mechanisms on ability development, I focused on the dynamics of students' reflection development. Here are some considerations:

First, the basis of awareness is the generalization of the psychic processes that lead to their acquisition (Vigotsky, 1983). The general ability to reflect is formed in junior school students (from 6–7 to 10 years old) because of the sensitivity to learning that is peculiar to this age. Here reflection reveals itself through the students' control over their behavior, emotions, and needs and through their analysis of their thinking activity and current states of mind. The psychological peculiarities of children at this age, such as the unconditional acknowledgement of the teacher's authority, the belief in the truth of the knowledge they have to acquire, and their studiousness, enable them to enhance their receptivity to the educational task. Their mental activity is directed toward imitating their teacher and toward repeating the teacher's actions and statements.

Second, for teenagers, the transition to a new stage is characterized by a change of inward preconditions, which are built over and to some extent repress previous preconditions. At the beginning of the teenage years, a child's interests transfer from an adult or a teacher, who has had authority over the child, to peers, who become more important to a child than they were before. Thus, the direction of reflection development moves from learning to personality. This movement is characterized by self-assessment and self-other assessment, by analysis of the processes of interpersonal interaction, and by the results of that interaction. Reflection development is kept out of learning. Teachers do not focus their attention mainly on this task.

Third, in the teenage years, consciousness is enriched and becomes systematic and ordered. Hence the development of reflexive processes is characterized by the establishment of the super-situational and cause-effect relationship. I have pointed out here that students' reflexivity or, in other words, their ability to reflect is spontaneously developed during their education. However, the students' ability to reflect is a foundation for self-control and self-analyzing, and, accordingly, for self-development. Undoubtedly, self-development should be an important educational goal for schools as well for society.

Overview of the Experiment

On the basis of the above analysis of the role of reflection and reflexivity in learning activities, I assumed that students' ability development depends on their reflection and reflexivity.

The research objectives:

1. To assess the level of reflexivity among students in the fourth grade with high and low indexes of general mental abilities.

2. To indicate a correlation between the level of reflection of separate intellectual operations and individual indexes of reflexivity among fourth-grade students.

3. To identify reflexivity development as the development of a personality trait among sixth-grade students.

These objectives defined the research strategy and its design, which were realized in a series of experiments.

Method

Participants: 138 students who studied at a large, metropolitan, comprehensive school. They were fourth-grade students, who were 8 to 10 years old (n = 47, M = 8.89; $SD = 0.76$), sixth-grade students, who were 10 to 12 years old (n = 49, M = 11.04; $SD = 0.64$), and tenth-grade students, who were 15 to 16 years old (n = 42, M = 15.48; $SD = 0.51$).

In the sixth and tenth grades the experiment was conducted during classes. Two groups of students from each grade level were selected: an experimental group and a control group. In order to assess the extent of the influence of students' development of intellectual operations on their reflection, the experimental group con-

tained students who were engaged in the development of intellectual operations. The control group was not engaged in this way.

Measures and Procedure

At the present time there are many methods for diagnosing reflexive processes. Some of them are designed to diagnose single types and forms of reflection; others, to diagnose the level of reflective expression. In choosing the methods for the research I was guided by the principles of the system and activity approaches. I wanted to identify reflexivity development as a complete, single, and integral process. Nowadays the integrative (system) property of reflexive ability is being studied by Anatoly V. Karpov, Irina M. Skityaeva, and Vaveriya V. Ponomareva. Based on a system-activity approach, Karpov (2004) has defined reflexivity as a professionally significant trait of the activity subject. By reflexivity he means the ability that is characterized by having a measure of expressiveness that can be identified in certain psychometric procedures. In line with this statement I used the method of diagnosing the level of the development of reflexivity (Karpov, 2003). The method is designed to assess three reflexivity types:

- – situational reflection, which supports control of one's behavior in actual situations
- – retrospective reflection, which supports the analysis of activities that were engaged in previously and events that have already happened
- – perspective reflection, which supports the analysis of future activity by making plans for the future

A questionnaire contained 27 questions: direct questions (15) and reversed questions (12). The participants were asked to choose the correct answer from among seven possible answers:

1 — absolutely incorrect
2 — incorrect
3 — incorrect then correct
4 — do not know
5 — correct then incorrect
6 — correct
7 — absolutely correct

After testing, the participants' answers were transformed into a sten scale to process the empirical data.

Moreover I also used the test method designed by Livio Antonio da Silva (2010) in his dissertation research under my guidance. The method contains some tasks and a series of follow-on questions that are designed to identify the level of the involvement of reflexive mechanisms in the process of intellectual problem solving. The answers were assessed on a 4-point scale. The sum of each participant's points indicates the actual level of reflection on intellectual operations. The tasks were developed for fourth-grade students on the basis of their knowledge, capacities, and skills. The results were used to form the sample of fourth-grade students.
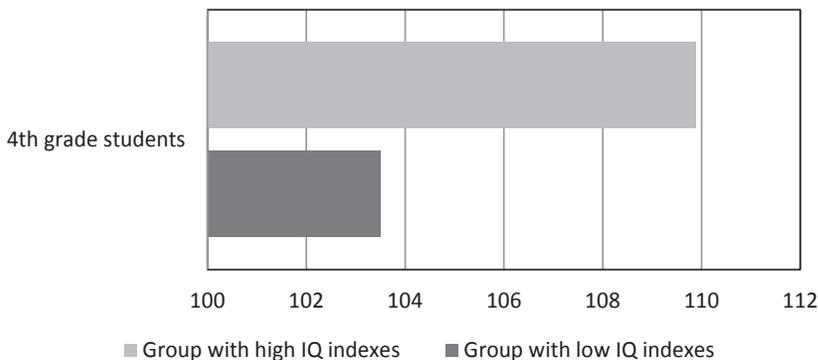
Results

Initially the level of reflexivity development as a personality trait among the fourth-grade students with high and low indexes of general intellectual abilities was analyzed. Figure 1 displays the results of testing. The average score for the group of students with low IQ indices was 103.5 points. According to Karpov's method, this result corresponds to 2 stens. This is evidence of a low level of reflexivity development. The scores for the group of students with a high level of intellectual ability corresponded to 3 stens. This is evidence of a moderately low level of reflexivity development. Thus in both groups of fourth-grade students the level of reflexivity development was below average.

Let's now have a look at the intercorrelation between the reflexivity level of single intellectual operations and the individual level of reflexivity among fourth-grade students. Karpov's method of diagnosing reflexivity development and the method for investigating the level of reflexivity for single intellectual operations (da Silva, 2010) were used to calculate the individual reflexivity level. In Figure 2 the final assessments of both analyzed indexes are expressed in a group profile. Thus, the higher a student's index is using one of the methods, the higher it is using the other method. The correlation between indexes of both methods is $r = 0.82$ ($p = 0.001$).
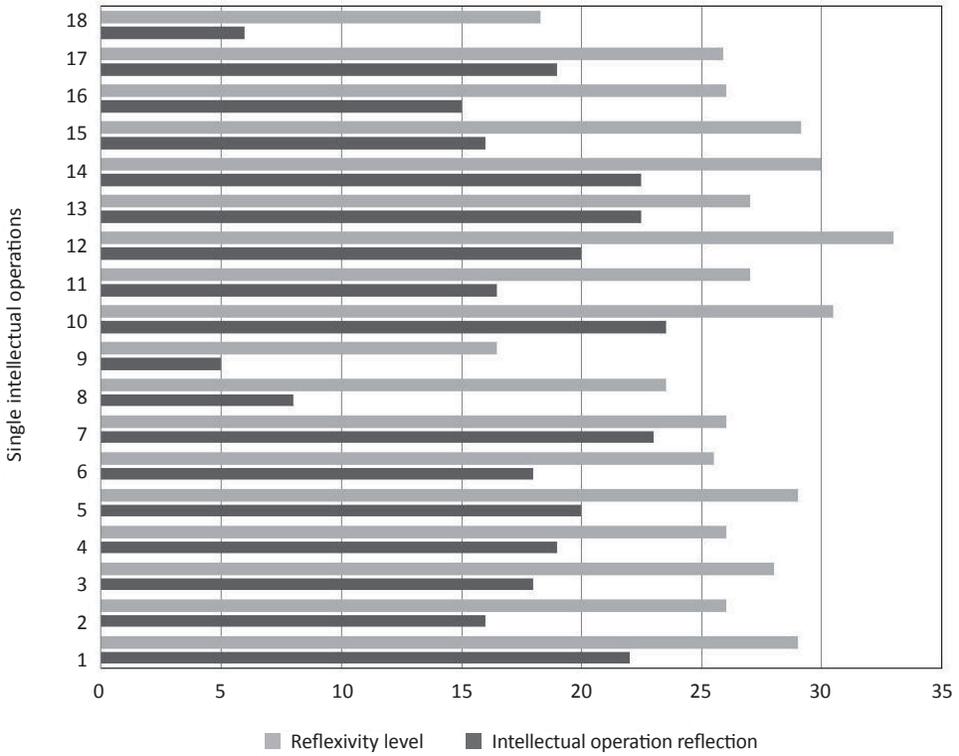
Figure 3 presents a comparative analysis of reflexivity levels in the experimental groups and the control groups of the sixth- and tenth-grade students.

The average level of reflexivity in both groups of sixth- and tenth-grade students was lower than that for the fourth-grade students with high IQs. In the sixth grade, the students in the control group, who had not been engaged in the development of intellectual operations, demonstrated an average level of reflexivity corresponding to 2 stens, evidence of the lowest level of reflexivity development. The students in the experimental group, who had been engaged in the development of intellectual operations, demonstrated a reflexivity level on the border of 3 stens. This result indicates the lowest level of reflexivity.

This tendency is more evident in the tenth grade. The students in the control group had average scores corresponding to 1 sten, while the students in the experimental group had average scores corresponding to 2 stens.

Figure 1. Level of reflexivity among fourth-grade students with high and low indexes of general intellectual abilities (N = 47).

Figure 2. Comparative analysis of intellectual reflexivity and individual reflexivity of fourth-grade students.
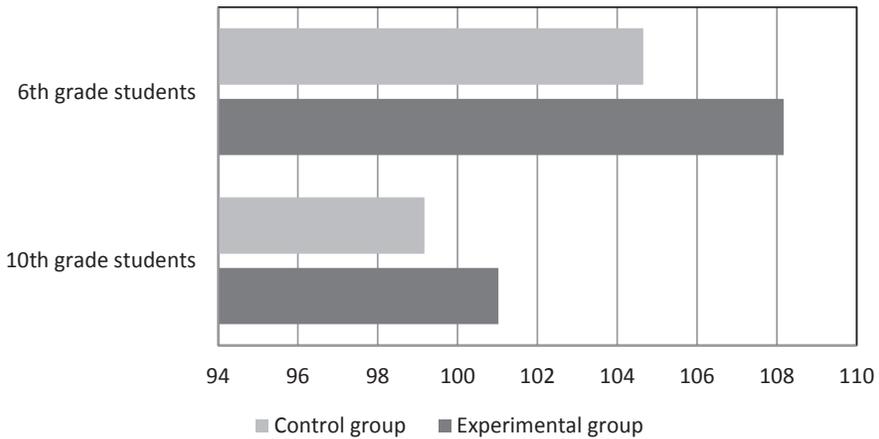
Figure 3. Reflexivity level in experimental and control groups of sixth-grade and tenth-grade students.

Discussion

The experimental data show that reflexivity as a personality trait was highly developed in the fourth-grade students with high indexes of general intellectual operations. This finding raises the question of whether high intellectual development determines students' reflection or whether the development of reflection determines students' intelligence. In keeping with the results of my previous research, which have indicated significant correlations between the indexes of reflexivity and the indexes of intellectual operations, it might be said that reflexivity and intellectual development mutually correlate. In my research I also have found that the more students express their individual reflexivity, the more they express their ability to reflect on their intellectual operations. So we can conclude that the level of reflexivity development depends on general intellectual abilities. In the process of the development of abilities through the acquisition of intellectual operations, the reflexivity level is expressed by the successful acquisition of single intellectual operations and consequently of abilities in general. The research data presented here indicate that students' acquisition of intellectual operations should be followed by the development of their reflexivity.

It appears nowadays that the development of reflexivity mechanisms in the learning process is one of the perspective ways to heighten the quality of education by developing students' abilities, capacities, and skills to perform intellectual tasks. At the same time it is evident that reflexivity development is not regarded as an important objective that teachers aim to reach in the learning process. It is important to study this aspect of teachers' activity in order to enhance the quality of students' training in the early stages of their education. The parents' role here is also important, particularly if the school cannot provide reflexivity development. There are many tasks that are directed toward forming reflection and toward developing it in junior-school-age children. One can have conversations with children that include, for example, the analysis of literature, current events, deeds, and reactions of other people. So, as has been shown, the spectrum of instrumental means might be enough; however, their importance in developing a child's intellectual potential should be accentuated.

If we look at reflexivity development as a personality trait among sixth- and tenth-grade students, we can see that the reflexivity level has a tendency not to increase but to decrease. In addition, the students in the experimental groups, who had undergone for some years the development of intellectual operations, demonstrated the highest level of reflection. Thus in the development of abilities special work needs to be done in comprehensive schools on the formation of students' reflexivity. This conclusion is a matter of principle in my research; it underlines the impact of purposeful work on the development of reflection. Based on the significance of reflexivity mechanisms in the developmental process and in the self-development of students and on their awareness of their own possibilities and areas of potential growth, this proposal is an important signal to a system of education that does not traditionally give enough attention to this issue. Task-oriented work on the development of intellectual abilities enables proper and substantial changes in students' development.

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Structural dialectical approach in psychology: problems and research results

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In this article dialectical thinking is regarded as one of the central cognitive processes. Because of this cognitive function we can analyze the development of processes and objects. It also determines the possibilities for the creative transformation of some content and for solving problems.

The article presents a description and the results of experimental studies. This evidence proves that dialectical thinking is a specific line of cognitive development in children and adults. This line can degrade during school time if the educational program follows formal logical principles, or it can become significantly stronger if the pedagogy is based on dialectical methodology.

Keywords: structural-dialectical approach, dialectical thinking, dialectical tasks, strategy of mental handling of oppositions

The structural-dialectical approach in psychology, which was developed by a team led by Nikolay Veraksa, is based on dialectical logic. Dialectical logic regards any object as developing, as constantly being in a dynamical context. "Dialectness" is an essential characteristic of a developing object; in other words, a developing object constitutes a unity of oppositions. This feature of complex objects had been defined in a most strict way by Hegel's logic (1970) and has been confirmed many times by scientific research. In the case of a developing object it is correct to discuss not the contradiction but the special type of relations of oppositions that allow them to exclude and to presuppose each other at the same time.

As dialectical thinking is a form of mental process different from formal logical thinking, its researchers face a contradiction. They emphasize the absolute dialectness of nature and society and see inalterability as secondary, as a single moment within the constant changing of objects and phenomena. They also understand the importance of dialectical thinking as a cognitive activity assigned to reflect this

dialectness. Yet, although they acknowledge dialectical thinking to be the supreme form of thinking, it appears relatively late in a person's development. The contradiction lies in the fact that if children come across dialectics of things in the world and dialectical thinking appears much later in their development process, some other form of thinking must provide them with the ability to reflect reality adequately; such thinking is not yet dialectical thinking (because it is supreme), but still has to be dialectical (as it's oriented on the dialectics of things). This contradiction was explored in the works of J. Piaget, who distinguished two kinds of dialectics— "elementary" and "supreme."

Therefore the problem can be set as follows: Are there really two kinds of dialectical thinking—"elementary" and "supreme theoretical," or is there only one kind, whose structures are similar on all levels and whose distinctions are determined by the content?

We proceed from the understanding that dialectical thinking is a special form of cognitive activity and that it is different from the traditional way of thinking and has a certain unity on all levels of representation. On the basis of this understanding only, one can speculate that dialectical thinking, as an independent line in cognitive development, can be ascertained in the mental processes not only of children but also of adults. The unity of dialectical thinking at all ages originates from the dialectical nature of strategies for the transformation of situations whose essential characteristic is the determination of the relations of opposition. Along with the unity of the mechanism of dialectical thinking, certain distinctions are presupposed by the specific features of the cognitive means implemented by a person while in the process of thinking. This difference in means in its turn depends on the activity undertaken by the child or adult (Shiyan, 2011a).

Within the framework of the structural-dialectical approach, dialectical thinking is regarded as creative, productive thinking (Bayanova, 2013; Krasheninnikov, 2008; Shiyan, 1999; Veraksa, 1990, 2007). A person using dialectical thinking can see any object, process, or phenomena as content in which significant oppositions are represented (Shiyan, 2009). Therefore, this content can be transformed dialectically; for example, a resolution of the opposition can be found, or a new situation can be constructed that is opposite to the initial one. Transformations are performed through the following dialectical acts (Krasheninnikov, 2005):

1. Dialectical transformation. For any objects, ideas, phenomena, situations, a person finds oppositional ones.

2. Dialectical integration. In the structure of any object or situation a person establishes the presence of oppositions that mutually disaffirm each other. There can be several pairs of this kind, and each of them characterizes prominent features of the object.

3. Dialectical mediation. For any pair of oppositions a person finds or constructs an object in which these oppositions are present simultaneously.

4. Dialectical seriation. A person regards any object or situation as intermediate between the initial condition and the final condition, which is the opposite of the initial one.

5. Dialectical transaction. While exploring a process, a person can regard it in reverse order: that which was initially considered as an end of the process is regarded as its beginning, and the initial condition is understood as the final one.

6. Dialectical change of alternative. A person regards an object in the context of one pair of oppositions and in the context of another pair.

7. Dialectical identification. A person first sees objects and phenomena as oppositional and then establishes their identity and similarity.

8. Dialectical dis-identification. The things initially seen as identical now are understood as oppositional.

Dialectical cognitive activities reveal the process of the transformation of objects and situations. In fact, they describe the space of the possible transformations of an object. In this sense, dialectical logic appears to be the logic of the creation of new opportunities through transition from one kind of opposition constituting an object or situation to another kind by means of developing the operations of dialectical thinking. Thus any object becomes a fragment of a structure in the space of opportunities. The object turns up as an entity and as a part. The object is an entity in regard to the substructures on which it is based as a cycle of opportunities. And the object can be seen as a part in relation to higher-order cycles. In other words, the object becomes a "single point," "a knot" of the realization of various opportunities. The structure of an object is determined by the relations of opposition among different features and links existing around it. The object is, so to say, interlaced into various structures of relations of opposition. While exploring it, a researcher finds himself or herself at one point in the space of opportunities. An analysis based on the logic of opportunities is actually the movement in this space of opportunities, of this very object. Accordingly, an analysis of the object as an entity is connected to the establishment of a cyclic structure within the object, which is the object itself. By reference to the structural-dialectical method, this cyclic structure consists of oppositions. That is why the problem of the analysis of the object as an entity is traced to distinguishing those oppositions above all. Put the other way around, within this object there is a multitude of other oppositional pairs and, therefore, other cycles. So it is crucial to learn how to pass from one pair of oppositions to another. This transition is performed through analyzing the features of the object and is tightly connected to the implementation of dialectical cognitive acts.

Thus, when we discuss the implementation of the structural-dialectical method, we understand it as an intentional "development" of a dialectical cycle in an object that seemed initially static (and therefore, maybe, problematic). It is important to emphasize that when we speak about intentional and not spontaneous implementation of the operations of dialectical thinking, these operations still remain possible vectors of structural development, common principles, but they are not an exhaustive manual of instruction for the "production" of creative things.

A description and the results of experimental studies can be found below. Taken together, this evidence proves that dialectical thinking is a specific line of cogni-

tive development in children and adults. This line can degrade during school time if the educational program follows formal logical principles, or it can strengthen significantly if the pedagogy is based on dialectical methodology.

Development of a Dialectical Strategy for the Mental Handling of Oppositions in Children and Adults

Hypothesis

The development of dialectical thinking is a complex, multilevel process determined by the specifics of the educational situations occurring within the cognitive activity of a person.

Participants

We performed a benchmarking study of the age-related specifics of the development of dialectical acts and different strategies for the operational handling of oppositions within the life cycle. We implemented diagnostics of the structures of dialectical thinking for four age groups: preschool children, elementary school students, senior school students, and adults. The experimental part of the research was conducted in two Moscow kindergartens—#1602 (the instructional program in this kindergarten is "dialectics") and #1511 (the instructional program in this kindergarten is "development")—and two universities (students in the evening course of the faculty of pedagogics and psychology at Moscow State Pedagogical University and students in the evening course of the faculty of social psychology at Moscow State University of Psychology and Education). In total 232 persons participated in the research.

Methodological Toolbox

The technique called "What cannot be simultaneously?" is an authorial modification of the technique "What can be simultaneously?" developed by Veraksa (1987, 1990, 2007, 2009, 2010, 2011). This method consists of two parts. The first part is dedicated to examining the respondent's ability to distinguish oppositions from the whole variety of an object's characteristics; and the second part is designed to explore strategies for the handling of oppositions by people of different ages in a situation that has been binary-structured in advance.

The method called "an unusual tree" is widely implemented in most research conducted within the framework of the structural-dialectical approach. It was also developed by Veraksa (1987, 1990, 2009, 2011). This technique allows us to explore dialectical transaction as an operation of dialectical thinking. It helps us trace the sequence of using the means of formal and dialectical logics within the process of solving an unstructured creative problem.

Parameters for Analysis

We chose the following parameters for the analysis of the age-related specifics of the mental handling of oppositions (Belolutskaya, 2011):

1. The ability to independently find and specify the oppositions hidden within a variety of features.

2. The share of refuses-to-operate-oppositions in the whole mass of responses. This parameter characterizes the extent to which human thinking rigidly obeys the formal logical rule of noncontradiction.

3. The average share of dialectical solutions per group. This evidence reflects the extent in which respondents of different ages are willing to implement the operations of dialectical mediation and transaction.

4. The interconnection of the ability to distinguish oppositions individually and the implementation of the strategy of dialectical mediation (group evidence and individual diagnostics data). Examination of this parameter allows us to answer the question (frequently asked by those who criticize the structural-dialectical approach) of whether people (including children) really transform the contradiction and do not just make up a chaotic "heap" of all possible characteristics. In other words, do they really understand the handling of oppositions?

5. The interconnection of mediation and transaction as dialectical acts. Analysis of this parameter contributes to the study of dialectical thinking as a system mechanism that begins to be established at preschool age.

6. Statistically significant differences between the groups of respondents who are the same age but are studying in different instructional programs; the difference is based on the criterion of the frequency of applying the strategy of handling oppositions. Once we analyze this parameter we can ascertain and describe those features of the structure of the concept of contradiction that depend strictly on age and those that can be controlled and affected by varying the educational conditions.

**Specifics of the Implementation of the Dialectical Strategy
of Handling Oppositions by Respondents of Different Ages**

*1. Ability to Find Oppositions Individually Within
a Variety of Characteristics*

The ability to distinguish oppositions significantly and steadily increases during a lifetime, even though it does not reach the 100% level in adults' thinking.

We found a significant difference on this parameter between the two groups of preschool children (a 40% success rate for the students from kindergarten #1602 and a 71.6% success rate for the students from kindergarten #1511). This difference can be explained by the characteristics of the educational program and the high sensitivity of dialectical mental structures to the impact of the pedagogy employed.

2. Share of Refuses-to-Operate-Oppositions in the Whole Mass of Responses

The principles of the formal logics dominate and reliably show up in the thinking of a person of any age: more than 50% of the proposed solutions belonged to the for-

mal logics. The other half of the solutions were unequally distributed among four false strategies for handling oppositions and implementing a productive dialectical strategy.

Only one group was significantly distinct from the others, with 75% refuses: the students from kindergarten #1511.

3. Average Share of Dialectical Solutions per Group

Within the framework of our research we considered responses "dialectical" if they were made up through implementation of the operation of dialectical mediation (the "What can be simultaneously?" technique) and the operation of dialectical transaction (the "an unusual tree" method).

In calculating the share of dialectical responses we considered the number of positive responses as 100%; in other words, the cases in which respondents refused to operate oppositions were not counted. If we had considered the total number of responses as 100%, the shares would be approximately twice as low. Therefore, if we regard the distribution of the average number of responses, one half or a bit more are formal logical solutions (refuses), 7% to 10% are dialectical, and 30% to 40% are mistakes of different kinds.

The additional results of diagnostic are presented in tables 2–3.

Statistically significant differences are underlined.

One might come to the following conclusions based on the evidence presented in tables 1, 2, 3:

1. Respondents of any age demonstrate the implementation of dialectical logic very rarely: five to six times less than those implementing the formal logics (refuses-to-operate-the-oppositions) and three to four times less than those making mistakes of all kinds.

2. Preschool children and adults produce a significantly higher share of dialectical solutions than do the elementary and senior school students.

Table 1. Implementation of the Operation of Dialectical Mediation

Group	Implementation of the operation of dialectical mediation (%)
Preschool, kindergarten #1602	16.31
Preschool, kindergarten #1511	5.52
Elementary school #1716	16.63
Elementary school #689	13.91
Senior school #1716	15.31
Senior school #689	12.72
Adults	16.72

Table 2. Significance of the Distinctions Between the Groups Under the Parameter of Dialectical Mediation (χ^2-Pearson Criterion)

Group	Preschool, kindergarten #1602	Preschool, kindergarten #1511	Elem. school #1716	Elem. school #689	Senior school #1716	Senior school #689	Adults
Preschool, kindergarten #1602	#	4.74	2.466	29.44	0.47	0.13	2.39
Preschool, kindergarten #1511	#	#	8.35	3.62	9.95	5.01	6.31
Elem. school #1716	#	#	#	0.73	0.53	7.018	0.19
Elem. school #689	#	#	#	#	0.66	0.66	0.66
Senior school #1716	#	#	#	#	#	0.19	0.67
Senior school #689	#	#	#	#	#	#	5.52
Adults	#	#	#	#	#	#	#

Table 3. Implementation of the Operation of Dialectical Transaction

Group	Average value
Preschool, kindergarten #1602	8.31
Preschool, kindergarten #1511	1.34
Elementary school #1716	1.72
Elementary school #689	1.61
Senior school #1716	10
Senior school #689	3.41
Adults	7.82

3. The results for preschool children and adults do not seriously differ.
4. The lowest share of dialectical solutions was offered by the elementary school students.
5. The results for the elementary and senior school students do not significantly differ.

The preschool children from kindergarten #1511 stand out from the general trend because of the obvious influence of the educational program.

4. Interconnection of the Ability to Distinguish Oppositions Individually and the Implementation of the Strategy of Dialectical Mediation

We examined this parameter through determination of a correlation between the results of Part 1 and Part 2 of the "What can be simultaneously?" technique.

There was a significant correlation between these parameters in the groups of preschool age only (0.62 in kindergarten #1602 and -0.62 in kindergarten #1511).

Thus, the ability of those in the older age groups to distinguish oppositions individually from a variety of characteristics was not any more dominating than it was in relation to the parameter of elaboration of dialectical solutions. Because success in finding oppositions sharply increases along with growing up, one can assume that the problem set in Part 1 of the "What can be simultaneously?" technique was too simple for the respondents. However, if a new technique is constructed and dedicated to determining sensitivity to oppositions but is based on more complicated material, a significant correlation could also be found in the other age groups. This thesis requires a further experimental check.

One can see a significant negative correlation in the group of preschool children in kindergarten #1511, who were studying in the development program. Combined with their very high level of success in identifying oppositions (almost equal to the indexes of adult respondents), the highest percentage of refuses-to-handle oppositions, and the lowest rates of dialectical thinking, this evidence could be interpreted as a reflection of the rigidly established formal logical prohibition against handling oppositions, a prohibition set by the specifics of the educational program. Thus these children can figure out oppositions very well and make very few mistakes from the point of view of the formal logics. Still it is difficult for them to regard these oppositions in the context of dynamical changes and to see them as poles that can be mutually transformed one into the other.

There was a significantly positive correlation in the results of children studying in the dialectics program in kindergarten #1602. In this group the ability to identify oppositions did not block implementation of dialectical thinking. Furthermore, if we turn to the results of the individual diagnostics of students of both groups that produced dialectical solutions for the tasks of the second part of the technique, we notice that all these students succeeded in Part 1 also. On this basis, we can conclude that the ability to distinguish oppositions is a necessary condition for the demonstration of dialectical thinking.

5. Interconnection of Mediation and Transaction as Dialectical Acts

This interconnection was examined through correlation within the data received as a result of the two techniques ("What cannot be simultaneously?" and "an unusual tree").

In regard to this evidence, we come to the following conclusions:

- There was a significant positive interconnection among the parameters in the groups of preschool children, senior school students, and adults. This finding confirms our assumption that dialectical thinking is a system mechanism consisting of interconnected actions.

- The fact that there was no correlation in the groups of elementary school students causes us to assume the existence of a special sensitivity in children to an educational program based on formal logical principles.

6. Statistically Significant Differences Between the Groups of Respondents Who Are the Same Age but Are Studying in Different Educational Programs

We emphasize that statistically significant differences in the implementation of the dialectical strategy of handling oppositions between groups of the same age but following different educational programs were found in the preschool groups only. Still, the steadiness of this trend attracts attention; one can see significant differences in an index of five parameters (the ability to find oppositions, the implementation of dialectical acts of mediation, the implementation of dialectical acts of transaction, the implementation of the strategy of handling oppositions based on "formal mediation," and "metaphorical integration").

We can thus come to a conclusion about the specifically high sensitivity of the dialectical structures of 5- to 7-year old children to the impact of the pedagogy. This sensitivity makes the elaboration of a complete educational program for senior and preschool children as well as for students in the elementary grades extremely relevant and important.

Development of Dialectical Thinking During the Process of Solving Dialectical Problems

A longitudinal experimental study was conducted from September 2009 to May 2011.

Hypothesis
The solution of dialectical problems is a mechanism of the formation of dialectical mental structures in preschool-age children.

Selection Criteria for Experimental and Control Groups
The experimental group consisted of 22 5-year-old children, and the control group had 23 5-year-olds. All respondents attended kindergarten and studied in similar educational programs.

Before the beginning of the lesson we conducted diagnostics of dialectical thinking by means of the "What can be simultaneously?" and "an unusual tree" techniques. A significant difference between the experimental and control groups was revealed by the "What can be simultaneously?" method: the average index for the experimental group was 0.36, and for the control group it equaled 1.11. The results of the "an unusual tree" technique revealed no significant difference (the average index was 0.06 and 0.05, respectively). The percentage of children who produced at least one dialectical answer was 40.91% for the experimental group and 56.52% for the control group. Thus children from the control group initially had more success solving problems requiring implementation of dialectical mental actions.

Procedure

Children from the experimental group attended three 30-minute-long classes a week over 2 years. The classes were based on the principles of the structural-dialectical approach.

The essence of these classes was the construction of educational situations of a specific kind—specifically, dialectical tasks. A dialectical problem is an analytical one that requires dialectical mental actions in order to be solved. This kind of problem posed for children of preschool age is based on material from myths and fairy tales. For example, the teacher asks a speculative question and then starts to "undermine" proposed points of view. For instance, was the tail brought by Winnie the Pooh to Donkey (Eeyore) for his birthday really a present? If the children say "Yes," the teacher immediately argues, "But how it could be a present if it was Donkey's own tail?" When the children switch to "No," the teacher switches to "Actually, at that moment the tail had already been lost and belonged to Owl, so it could be a birthday present." During the discussion the teacher uses visual models and schemes that help the children to "fix" oppositional conditions of the same object in their thinking and then to perform the "integration"—in this case, coming to the conclusion that the tail is simultaneously "a present" and "not a present."

Classes of this kind are conducted also by using material from well-known fairy tales. For example, is the old woman in "The Goldfish" by Alexander Pushkin the same in the beginning and in the end of the story? In the myth about Orpheus and the Sirens, was Orpheus the listener or the singer? (Shiyan, 2012, 2011).

Results

Results of the experiment are presented in Table 4.

Table 4. Results of the Diagnostics of Dialectical Thinking in the Experimental Group (EG) and the Control Group (CG)

Measure	September 2009. Initial diagnostics (average index)		May 2010. Intermediate diagnostics (average index)		May 2011. Final diagnostics (average index)	
	EG	CG	EG	CG	EG	CG
"What can be simultaneously?" technique	0.36	1.11	1.69	1.82	2.05	1.20
"An unusual tree" technique	0.06	0.05	0.27	0.06	0.48	0.36
Total	0.41	1.11	1.41	1.23	2.17	0.93
% of children who produced dialectical answers	40.91	56.52	50	46.15	65.22	50

The experimental results thus allow us to calculate the reliable difference between the level of development in the control and experimental groups. Furthermore, over time, the percentage of children in the experimental group producing dialectical answers significantly increased.

Results of the Pilot Study on Cross-Cultural Differences in the Development of Dialectical Thinking

In order to receive additional evidence for the idea that dialectical thinking is an independent line of cognitive development, we conducted a pilot study on cross-cultural differences in the development of dialectical thinking.

Characteristics of the Respondents

One hundred nineteen students at Moscow State University of Psychology and Education (Russia) and 117 students and graduate students at the Central University of Arkansas (United States) took part in the study.

Methodological Toolbox

The techniques "What can be simultaneously?" and "an unusual tree" by Veraksa were used in the study.

Results

The average index for dialectical solutions of all test problems was 1.31 for the Russian students and 1.35 for the American respondents. Thus the frequency of the production of dialectical answers appeared almost equal.

Discussion

Based on our research, we can formulate some common trends in the establishment of dialectical thinking within the human life cycle. The share of respondents demonstrating dialectical thinking in the various age groups was approximately equal, even with the 5% to 10% decrease in elementary school students.

Dialectical thinking is a system mechanism for handling oppositions; such thinking occurs during the whole life of a person. The first signs of dialectical thinking can be noticed already in preschool-age children. At that time dialectical structures are at the stage of active development and therefore are extremely sensitive to the influence of the pedagogy employed. In preschool the connection between the concept of oppositions and the method of handling them is being formed. The ability to distinguish oppositions among a variety of different characteristics is an essential condition and appears basic for the further establishment of dialectical thinking. However, the specific features of the educational program determine whether the concept of oppositions becomes a new resource for a person (if the person becomes able to transform them) or whether thinking will develop along the lines of formal logic, which bans operations with oppositions because of the rule of noncontradiction.

The start of school is the crucial moment for the establishment of a child's dialectical thinking. Teaching in elementary school is based on formal logical principles that can lead to partial corruption of dialectical structures.

One should remember that the frequency of the implementation of a dialectical strategy for handling oppositions does not differ significantly in senior school students and preschool children.

Once the school period is over, the implementation of dialectical mental operations increases. This finding leads us to suggest the prospective development of an educational program for dialectical thinking in adults. The research results show us that within the framework of the structural-dialectical approach age should be considered not as a factor that strictly determines the development of the mental process and that sets certain limits for it but as presenting an opportunity for the purposeful formation of dialectical thinking within a specially designed educational program.

Conclusions

1. The development of dialectical thinking is a complex, multilevel process that occurs within the cognitive activity of a person and is determined by the specific features of educational situations.
2. Recognizing and distinguishing oppositions is a basic mechanism of dialectical thinking. Development of this ability is extremely crucial at preschool age.
3. The educational system is an important agent in the development of dialectical thinking.

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CLINICAL AND HEALTH PSYCHOLOGY

Cultural-psychological and clinical perspectives of research on phenomena of subjective uncertainty and ambiguity

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The article analyzes certain socio-cultural and personal predispositions, which determine the modern diversity of subjective uncertainty and ambiguity manifestations. It stresses that for the creation of 'realistic' clinical psychology (in terms of A.R. Luria) one needs to retrace the relations between the resourceful and the psychopathological aspects of the ambiguity phenomenon and the cultural environment with its destructive ideals and mythologems, manipulative media-technologies and all-pervading idea of 'deconstruction'. Methods for modeling the experiences of ambiguity in experimental settings, in pathopsychological examination and in projective psychological diagnostics are put in comparison. The arguments are adduced for the interpretation of deficient manifestations of subjective uncertainty as a criterion for diagnostics of the severity of personality disorder.

Keywords: subjective uncertainty (ambiguity) phenomena, socio-cultural, personal and clinical predispositions, experimental modeling, projective paradigm, individual styles of ambiguity transformations, borderline personality organization and psychopathology.

One of the main consequences of the cultural-historical approach of L.S. Vygotsky, A.R. Luria and A.N. Leontiev in psychology was instigation of studies in psychic structure on the basis of social and cultural conditions, requirements and framework of the practical objective activity. As A.R. Luria showed in his early and widely known work *Cultural differences and intellectual activity*, cognitive activity, which results from direct practical experience, and activity, which is mediated by 'logical codes', have different structure and efficiency depending on conditions and objective content of the cognitive task (Luria, 2001). The problems were formulated, which determined the trend of theoretical and experimental research in Russian psychology for the years to come: By virtue of which psychological mechanisms does the cultural situation change the structure and the organization of cognitive activity? What are the particular psychological mechanisms and the laws of interiorization process in norm and pathology? As it is known, the studies of L.S.

Vygotsky's school had led to the articulation of an array of fundamental theoretic and methodological guidelines about the systemic structure of consciousness, its sign-symbolic mediation, about the structure and the functioning of 'common' and 'scientific' concepts, about age-specific dynamics of the higher psychic functions and their organization, about pathological development of personality.

The cultural-historical paradigm, which was elaborated by the school of L.S. Vygotsky, points out social conditions, critical situations and the role of communication as the mediators of normal and pathological psychic development and thus sets the new theoretical model of the psychic, the methodology of experimentation in psychology as a whole and in clinical psychology in particular (Vygotsky, 1982). Special A.R. Luria's interest kindled the research of affective conflicts and 'complexes' with objective methods. Thus, due to the widely used plethysmograph he managed to measure the semantic structure of consciousness and later educed some conditions that influence the development, the content and the change of the breadth of semantic systems. He also generated such modeling of changes in experimental situation as variation of instructions, of stimulus material, of inner emotional states, of motivations and attitudes of the subject (Luria, 2003a). Therefore, he proved the dependence of semantic content of the psychic (including currently not represented in consciousness) on the level of cultural development, ethnical conditions, professional training and on the specifics of cultural tools used as mediators.

In his contemplations about the future of the so-called 'realistic psychology' A.R. Luria emphasized the importance of studying macro- and microsocial influences (class-specific and political biases, religiousness, group memberships etc.), which formulate substantial, structural and functional characteristics of individual mental life: "…in real human cognition we always find an array of alterations and 'distortions', which depend directly on social environment" (Luria, 2003b, p. 324). He also claimed that psychology, which disengages itself completely from particular circumstances of individual life, risks becoming a dogma, a scheme, a fiction, and thus the 'realistic psychology' should tend to the synthesis of nomothetic and ideographic principles of research (Ibid, p. 314) and ideally to renounce the positivistic (purely artificial, 'sterile') model of experimentation; it should take into account the role of individual biographies and conditions of development, particular social situations and communicative contexts both in past experience of a subject and in modeled here and now conditions of clinical survey and communication with psychologist.

For clinical psychologists the relations of contemporary culture (philosophy, art, cinematograph, styles of life), its destructive ideals and mythologems, manipulative media-technologies and all-pervasive idea of 'deconstruction' with various facets of socio-cultural phenomenon of subjective uncertainty is more or less obvious. In contemporary society the processes of bifurcation (intensification of uncertainty, unpredictability and chaos, in consequences of which anything may happen) appear in all spheres of natural and cultural, technogenic and personal surroundings. For a person the world becomes more controversial, unpredictable and uncontrollable.

One receives a complex and comprehensive block of tasks, which activates all levels of self-regulation in interaction with 'outer' social environment and intrapsy-

chic mental space. Our contemporary has an acute sense of catastrophe, instability, uncertainty in the face of the present and the future. No less striking socio-psychological phenomenon is the fear of the social and cultural Other, of the one who does not fit into strict framework of ordinary and familiar, which, to our opinion, is tightly connected to intolerance for ambiguity. These are the roots and the mechanisms of intolerance in its most broad manifestation — ethnic, religious or any other intolerance, including intolerance for one's own inner self. The acute sense of lack of authenticity, self-discipline, inner coherence, orderliness, the feeling of emotional instability and the void of meaning are the essential phenomenology of personality disorders.

The meta-analysis of studies of defects of perception and self-perception, self-consciousness, self-image and image of the Other draws us to the conclusion that the problem of subjective intolerance for ambiguity is tightly bound to some fundamental problems of clinical psychology — and not only with them. From the viewpoint of contemporary sociologists and culturologists, ambiguity in many of its socio-cultural manifestations is the spirit of the postmodern age (Bauman, 2002), the constitutive factor of the taken as a norm vagueness and fluidity of individual identity, moral relativism, unbelief and devaluation of interpersonal relations. All in all, postmodern sociologists tend to describe social processes clinically in terms of splitting, diffusion, fragmentation of self-identity, escalation of the problems of dependency-individuation in relations with society, which in some sense blurs the borders of uncertainty of social-objective environment and its subjective experience (Bauman, 2002; Beck, 2000). The powerlessness, the inefficiency, the chaotic actions and the terror of complete freedom are, according to Z. Bauman, the symptoms of this postmodern illness, which affects personality in its attempts of acquiring 'one's own face'. The well-known philosopher and culturologist M. Epstein echoes these speculations on illness of personality, its social origins and consequences for the future of our country, and constructs something like the generalized psychopathological syndrome of social macromutations, marking out of the syndromal factors the degeneration of the population, the frailty of the state borders and the rupture of the Federation, the all-pervasive corruption and criminalization, cynicism and indifference of the main part of citizens. But yet the future is not predetermined by the aggravating 'symptoms' of this social illness. The author describes the conditions of the contemporary Russian society with the original oxymoron 'hopeful ugliness', meaning that the imbalance of the current historical moment simultaneously holds two antagonistic outcomes: either the collapse of the whole social order, or its revival from the 'sprouts of hope', anomalous from the position of the developed postindustrial Western societies, but specific for Russia (Epstein, 2011). Thus, it is hard to escape the conclusion that the situation of uncertainty per se is not necessarily the destructive factor of development, it does not univocally predetermine its result, but it contains the potential for **new** creative possibilities as well. "The uncertainty of surroundings, which demands variability of behavior," claims V.P. Zinchenko, "is the basis of freedom and creativity" (Zinchenko, 2007, p. 17). T.V. Kornilova, who also analyzed the problem of uncertainty, came to the conclusion that "tolerance for ambiguity, openness and indefinite regulative profiles of any choice for voluntary and self-determined actions are the main conditions of active personal position in contemporary world" (Kornilova, 2010).

It is absolutely clear that in conditions of the socio-cultural pressing the uncertainty and the ambiguity of the organizational principles of social interactions coupled with the appeal of manipulative and machiavellian technologies as the tools of governance and usurpation of power by a certain part of society hampers seriously the possibilities of personal choice. The pressure of irrationally heightened social demands of the autocratic authorities is especially unbearable and stress-producing for people with excessive vulnerability and frailty of self-identity, with marked characteristics of psychological dependency, deficient individuality and cognitive simplicity, which are indicative for the borderline personality organization (Sokolova, 1989, 2005, 2009). From our point of view, on the basis of the 3 criteria (specifics of the projected content of anxiety, means of psychological defense and state of self-identity) it is possible to mark out at least 5 typical experiences of subjective uncertainty, which is caused partly by the inability of a person to manage the chaos of social and cultural ambiguity that characterizes the depth of the personality disorder, and partly by its resourceful capacities.

1. The first type is colored — or even flooded — by the overpowering negative affect, the core of which consists of the intolerable persecutory anxiety. Here the share of subjective uncertainty is the highest: the obscurity, the blur, the shapelessness, the boundlessness, the incoherence call forth the paranoiac fantastic representations of alienation, hostility, splitting of inner and outer 'Other', which threaten the psychological survival and the integrity of the Self.

2. The second type is also connected with the negative spectrum of emotional states, but here somewhat different phenomenology dominates: ambiguity, ambivalence, polysemanticity, unpredictability, inconsistency, entanglement, complexity. The fear of novelty leads to the preference of simplicity, order, commonness, routine, narrow-mindedness and predictability as the defenses from the looming catastrophe of the new, unforeseeable future and the 'undeveloped fields of the unknown', of the feelings of shock, perplexity, agoraphobia and panic in the face of loss of self-control and self-constancy.

3. The third type is characterized by the complete intolerance of uncertainty as a situation without an access to the inner resources and the resulting utmost dependence from social environment, the renouncing of the own system of norms, the preference for personal and social conformity, the complete submission to authority, regime, power, the alignment of the own self, the merging with situation and becoming a chameleon as a character in the Woody Allen's movie *Zelig*.

4. The fourth type of experiencing uncertainty is the manic projection of 'intoxication' with transgression and chaos, with the lack of all kinds of limits, of any restrictive norms and rules, with the preference for narcissistically perfectionistic all-accessibility and all-permissiveness.

5. To the last type, which is much less presented in pathology, pertain the positively colored experiences: curiosity, exploratory above-situational activity, games of imagination, generation of new meanings, joy, excitement as the

causes of pleasure from investigations and insights, which lead to creative and meaningful transformation of uncertain situations.

It is surprising that clinical psychology still does not give enough attention to the studies of subjective uncertainty. In the mean time, for more than 50 years cognitive and social psychology have been successfully developing and using various methods of creating experimental uncertainty: misfocusing of stimulus and conditions of its presentation, polysemantisity and ambiguity, emotional deprivation and variation of motivations, communicative and group contexts, etc. Due to the new research models, which are based on controlling the structure of objective and social environment and adopted from projective psychology, the role of attitudes, activity, prejudice, subjective stability in resistance to field forces, individual, age-specific and cultural differences in cognitive strategies (or in cognitive-affective styles) had been studied (Bruner et al., 1971; Rotenberg (Sokolova) 1971, 1976, 1980, 2005, 2009, 2011; Holodnaya, 1998; Auerbach, Blatt 1996; Blatt, Lerner 1983; Adorno et al. 1950; Hogg 2007; Witkin et al., 1954, 1981). Situational and personal determinants of successful coping with uncertainty during adaptation to changing 'cultural contexts' in complex or unfamiliar social environment (Belinskaya, 2007, 2009), links between tolerance for ambiguity and intellectual resources of personality, intellectual self-esteem (Kornilova, 2010) have been also considered.

The contemporary studies of 'diffused' and narcissistically-grandiose identity (including research on effectiveness of psychotherapy) show a great number of implicit indications of pathogenic role of uncertain social codes and rules, domestic scenarios and communicative styles, cultural ideals and moral criteria. In conditions of uncertainty people with 'fragile' borderline personal organization are especially prone to the loss of inner consistency and coherence of the self and the loss of time-perspective. Their diffused self-identity easily loses its essential qualities of historicity, dynamism, stability and authenticity under the pressure of unstructured socio-cultural environment — it 'scatters' on 'momentary snapshots', as Z. Bauman puts it (2002). In contrast, the pronounced tolerance of uncertainty and ambiguity may indicate the attainment of individual maturity, constancy and integrity of the self, which is able to manage separational and anaclitic anxieties.

In contemporary situation of wide-spread socio-cultural uncertainty clinical psychology is hard up for new methodological approaches that allow developing new technologies of diagnostics and socio-psychological rehabilitation of patients that suffer from personality disorders, are resistant to any kinds of pharmaco- and psychotherapy, are prone to early desocialization and invalidization in new and unconventional life circumstances, which are characterized by the high scale of ambiguity and lack of given rules. As it appears to us, the qualitative characteristics of subjective uncertainty, which are modeled in experimental diagnostic situation, can be considered as ecolgically valid and modeling complex socio-psychological situations in real contemporary life. The ways of managing uncertainty (with the help of which strategies and individual styles the person transforms the chaos of uncertainty into a structured, meaningful whole) serve as the reliable markers to measure stability of the self, productivity of means of self-control and self-regula-

tion, cognitive realism, socialibility and moral maturity, as well as the markers of their malfunction in mental diseases and personality disorders (Sokolova, 1989, 2005, 2009, 2011).

Here we again encounter the necessity to consider such fundamental problems of psychology as correlation of situational variability and aptitude for development and structural stability of personality, environmental socio-cultural influences and freedom of individual self-determination. All this compels us to turn once more to the methodological traditions, founded by A.R. Luria, B.W. Zeigarnik and S.Ya. Rubinstein, to interpret in new context practical tasks of pathopsychological examination and ecological resources of traditional research paradigms (Zeigarnik, 2000; Rubinstein, 1970).

For Russian pathopsychology, the initially unquestionable priority in diagnostics have been *the qualitative analysis and the interpretation of the process* of task performance in several contexts: (a) in terms of structural-activity approach; (b) in inseparable connection with the specifics of patient-experimenter communication; (c) considering anamnesis, clinical history and individual social situation of development. Thus it may be said that the best traditions of pathopsychological examination is always the analysis of integral case-study, the realization of unity of ideographic and nomothetic, actual-genetic and historical methodological principles. The communicative aspect of diagnostics appears in the specific organization of research situation and its motivation; in tracing the influence of differential forms of help, approval, critics, training for the process, the structure and the productivity of cognitive activity, in the estimation of anamnesis and actual sustaining resource of patient's social situation out of the hospital. The ability to develop the strategies and the tactics of pathopsychological experimentation on the basis of knowing general regularities of clinical picture and with regard to patient's individuality is considered the essential and the most difficult professional skill in Russian pathopsychology, which is necessary for the valid pathopsychological conclusion and elaboration of practical recommendations (Rubinstein, 1970). In postulation and upholding the principles of activity, subjectivity, communicative mediation in respect to the tasks of psychodiagnostics, the practical pathopsychology had greatly outpaced the psychological theory: it was in the mainstream of the humanistic ideas of 1960–1970-ies with their acute interest to axiological and semantic 'dimensions' of personality, to integrity and value of human relations that mediate (in norm and in pathology) the structure and the dynamics of cognitive activity, the malfunction of which cannot be understood without notice of its motivational, semantic and relational components (Zeigarnik, 2000).

The set of pathopsychological methods is commonly accepted and became a kind of a standard. Here a lot of methodical and methodological questions appear, which call for further discussion and scientific reflection. For example, may one consider the methods, which are used for the diagnostics of structure of the cognitive processes, in the viewpoint of the projective paradigm, i.e. as the methods for the diagnostics of personality structure and personal organization? May one put these methods on the basis of the scientific criteria into the class of the projective ones or at least rate as those having a projective component? If "yes", than does one need some modifications of the procedure of their usage and the very organization

of pathopsychological examination, its setting? We hold the affirmative answer to these questions and here are the reasons why.

It is commonly known that the projective methods are those that are directed on modeling various aspects of experiencing uncertainty, which is created by informational, sensory, emotional or semantic deficit. The conditions that provide modeling the experiences of uncertainty (and at the same time the experimental methods of its creation) are the specific organization of the whole situation of projective examination (stimulus material, its presentation, motivational instruction) and the specifics of the dyadic relationships "subject-psychologist", which are exteriorated and formed in the process of the whole examination. The multidimensionality of deprivation intensifies the load upon the ability of a person to bear uncertainty without loss of orientation in reality, without disintegration of personality, without self-destruction and destruction of the purposeful interaction with the physical, the social and the interpersonal environment. The uncertain situation provokes the emotional states of anxiety and activates the steady system of defensive and coping strategies of self-regulation and representations of the Self and the Other. The uncertainty of interpersonal relationships with the diagnostician is achieved through some ambiguity of his/ her communicative position: the combination of benevolently-neutral attitude and frustrating avoidance of direct answers to patient's questions. This lets the patient to 'encounter' his/ her own experience of uncertainty, which reconstructs the chaos of affective states and anxiety, the early traumatic experience of emotional relations with significant others, the world of infantile fears, conflicts and defenses. Thus, the projective potential of uncertainty calls forth the metacommunicative, the symbolic stratum of communication from the earlier experiences of relationships that calk the unconscious schemes of transference and countertransference. But the ambiguity of experimental situation also gives the unique chance to 'encounter' the here and now developing relationship of collaboration between patient and psychologist. Our research shows that the substantial specifics of emotional experiences, the ways of their structuring and control, the qualitative and stylistic characteristics of cognitive activity in conditions of 'tolerance-intolerance' of uncertainty are the strong criteria of the diagnostic appraisal of borderline and narcissistic structural and functional personality organization.

In comparison with projective methods, classical pathopsychological examination is organized a little bit differently: as a rule, the diagnostician works "inside" the so-called expert motivation, which to a great degree frustrates and narrows the range of individual motivation that forms for a patient the real sense of executed diagnostic tasks and personal interested involvement. In this sense we find it not quite justified in a traditional set of pathopsychological methods to introduce personality questionnaires and much less projective techniques *without change of setting: i.e. without differentiation of diagnostic tasks, motivation and time of examination, of instruction and dynamics of development of relationships between the diagnostician and the subject.*

However, serious differences in methodology do not prevent us from taking a good look at projective possibilities, contained in traditional pathopsychological procedures, given that the *organization* of examination will be modified. Notably, each of the proposed tasks-tests contains the element of choice from a

big quantity of solutions, and thus each test is created in such a manner that the choice of the optimal solution is hampered by perceptive, semantic or conceptual redundancy of conditions, mixed with the 'background noise' of false, inaccurate or random choices. For example, the completion of the method *Classification of Objects* involves abstracting from an array of inessential, emotionally charged or concretely-situational criteria; the same is true for the method *Exclusion of Objects*. The subject faces the need to concentrate attention and hold it durably on the goal of the task, which demands tuning out from the field (from objective and social environment), as well as the choice that rests not only upon the ability of analytic and synthetic activity, but also upon energies, self-dependence, criticism, reflection, resistance of self-esteem to frustration, that influence not less the ultimate outcome of task performance. From our point of view, the situation of the pathopsychological tests can be interpreted analogically with the well-known experimental situations of evaluation of individual differences and cognitive style, when uncertainty of conditions lets showing up individual predispositions (passive following the exterior circumstances or resistance to field forces and resting upon inner system of norms). The individual choice of strategy is dictated simultaneously by the demands of current problem specifications (real circumstances) and by the system of stable personal preferences concerning self-esteem, notions about significant others, values and / or necessity of tuning out from them, which provokes projection of the integral constellation of cognitive, emotional-regulative and communicative strategies of personality, its life-style. This methodological perspective is a further development of the ideas of A.R. Luria and B.W. Zeigarnik concerning the systemic organization of higher psychic functions and its restructuring under the conditions of psychopathology into a new configuration, a new *Geschtalt*. This allowed many Russian pathopsychologists to realize in specific investigations the principle of personality analysis "through cognitive processes" and "personal component of mental activity" of the patient (V.V. Nikolaeva, S.N. Loginova, I.I. Kozhuhovskaya, L.V. Bondareva, T.I. Tepenizina, E.T. Sokolova et al.).

Today we may say that clinical psychology is becoming subjective and ecological, inasmuch as it takes into account socio-cultural and environmental factors, which take part in generation and sustenance of anomalous development of personality. The last is evident for borderline and narcissistic personality pathology, which is characterized by hypertrophied and paradoxical 'leaps' between poles of dependency-autonomy from social environment and by deficit of individuality combined with pronounced individualism. We also get increasingly aware of the limitations of ecological validity of results, which are received exclusively on the basis of quantitative estimation of testing procedures, in 'sterile' laboratory conditions, with distance diagnostics; we become more convinced in the necessity to interpret the results of examination in communicative context, taking into account the relationships of a patient, which are built in the process of interaction during an examination as well as in an out-of-hospital situation. The support and the frustration that come from social networks and family, the educational degree and the fulfilling job, the communicative resource and the quality of compliance (as well

as the clinical and individual characteristics of the patient) — are extremely essential factors of symptom-building, disability, spontaneous remission, effectiveness of psychotherapy.

To resume the discussion of the problem, which was set up in the given article, we will stress some important moments once more. "The psychology," wrote A.R. Luria, "certainly cannot extract, isolate personality from the flow of social evolution and social influences, otherwise it risks to end in a fiasco in every attempt to grasp many contents and forms of the mental life" (A.R. Luria, 2003b, p. 319). We will add that psychology, which 'dissolves' personality in social contexts also risks ending in a fiasco by 'losing' personality.

It is also important to stress the many-valuedness and the versatility of the phenomenon of subjective uncertainty, as well as the meaning of socio-cultural, individual, personal and clinical factors that determine the specifics of its experience, the ambiguity of its social and political appraisal. The lack of predictability and the risk is definitely inherent in the state of uncertainty, but it would be a big logical mistake and a contradiction to the common sense to reduce its consequences to the imminence of personal madness or a social-political catastrophe. The history knows that the radical ways of ultimate solution of the 'intolerance of uncertainty' problem may be dictatorship, totalitarianism and the cruelest control of social and personal life (Adorno et al. 1950; Arendt 2008), and these ways are sufficiently reflected in philosophy and sociology. This problem appeals Russian clinical psychology in the context of correlation of socio-cultural and individually personal determination of activity's self-regulation, of the social and the individual, the stable and the developing in self-identity. The substantial and the methodological problematization of subjective intolerance of uncertainty, the profound consideration of various facets of this phenomenon as a cultural fact and its role in etiogenesis and pathogenesis of personality disorders sets new perspectives of development of cultural-historical approach to analysis of pathologic and 'borderline' phenomena is contemporary socio-cultural context.

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Psychological underpinning of personalized approaches in modern medicine: syndrome analysis of mitral valve prolapsed patients

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The article aims to demonstrate a high efficiency of the methodological means suggested by psychological syndrome analysis approach (Vygotsky-Luria school) for solving theoretical and applied issues in contemporary person-centered medicine.

This is achieved through an example of empirical study meant to construct a psychosomatic syndrome for 290 patients with mitral valve prolapse (MVP). Analysis of all collected data was based on psychological syndrome analysis concept (Vygotsky–Luria school) and A.R. Luria's principles for psychological factors (causes) selection, which determine the logic and structure of a neuropsychological syndrome. It demonstrated the association between characteristics of emotional experiences and clinical symptoms manifested in MVP patients. This correlation was statistically verified. The results proved that the most important syndrome-establishment factor (radical) is a specific emotionality and dysfunction of emotion regulation and emotional control in MVP patients (excessive emotional repression with insufficient reflection of emotional experiences). Features of the motivation sphere of MVP patients appear as a second psychological syndrome-establishment factor: these are domination of the motive of failure avoidance and unsatisfied self-approval need.

We argue that psychological syndrome analysis can be used as a means to approach not only diagnostic but also prognostic tasks both in clinical psychology and medicine, as well as for the development and implementation of the person-centered integrative diagnosis model.

We maintained that this approach, applied in theoretical and practical fields of clinical psychology and mental health care is highly efficient at the current stage of the science evolution due to prospects revealed by s new methodological context of postnonclassical model of rationality and a comprehensive character of the cultural-historical concept regarding an individual and his mind as a self-developing open systems.

Keywords: person-centered integrative diagnostic model, psychological syndrome analysis, Vygotsky-Luria school, psychosomatic syndrome, mitral valve prolapse, postnonclassical model of scientific rationality, self-developing system.

1. Introduction

The current situation in medicine, as described by many researchers, reveals a more pronounced "dehumanization" and "technification" of medical diagnostics and health care. Recent biological advances in medicine by far exceed developments in humanitarian disciplines owing to new technologies and state-of -the-art equipment, as well as the appearance of various technical mediators in health care, including diagnosis and treatment (Mezzich, 2007; Fulford, Christodoulou, Stein, 2011).

The answer to such an awkward situation in medicine is the emergence of research trends in psychiatry and clinical medicine with the focus of the analytical interest on a comprehensive analysis of personality in disease. This focus is urged by rehabilitation tasks, as well as preventive treatment and encouragement of treatment compliance. This corresponds to the shift from a general nosocentric paradigm towards the bio-psycho-social and person-centered approach in psychiatry and medicine. (Engel, 1982; Mezzich, 2007). The tendency results in the introduction of multiaxial diagnosis systems in psychiatry, and in the appearance of such category as "a person-centered integrative diagnostic model" (Salloum, Mezzich, 2009).

Within the paradigm, diagnosis is defined as a description of ill and positive aspects of health, which mutually interact in the personality field. The person-centered integrative diagnostic model (PID) should provide information covering both ill and positive health. Within this category, the structure of medical diagnosis includes not only certain facts concerning impaired health but also information about preserved health that takes into account personal and social values and resources of the patient and his/her ability to adapt and compensate, as well as the patient's life quality (Salloum & Mezzich, 2009).

The theoretical model of PID makes it necessary to consider a number of psychological constructs, such as subjective pattern of disease, defense mechanisms, coping processes, quality of life, etc. It provides a reason for the inclusion of psychologists into poly-professional collaboration in medicine and health care and the need for multidisciplinary research and multidisciplinary clinical and psychological diagnosis in the PID frameworks.

Psychological research paradigms appear in the limelight of the multidisciplinary clinical and psychological context mainly because contemporary clinical psychology can suggest the mode of organization for a study and a method for conducting it. Psychological syndrome analysis is the very method that enables the observation of complex clinical and psychological phenomena from the perspective of a systemic approach (Vygotsky, 1993; Luria, 1973).

The *primary aim of this article* is to demonstrate the high efficiency of methodological means suggested by the psychological syndrome analysis approach (Vygotsky-Luria school) for solving theoretical and applied issues in modern person-centered medicine.

We give an example of multidisciplinary research of patients with mitral valve prolapse (MVP) using methodological principles of the syndrome analysis. The construction of a psychosomatic syndrome will facilitate a structural analysis of complex psychosomatic phenomena in MVP patients, which helps separate

manifestations of psychological factors and mechanisms from their emergence and functioning, and gives a psychological interpretation of clinical phenomenology.

We seek to show that a psychosomatic syndrome may serve as a means for determining not only diagnoses but also prognoses both in clinical psychology and in medicine.

For the sake of preliminary remarks it should be noted that in L.S. Vygotsky's and A.R. Luria's works a syndrome is a structure shaped by a constellation of causally-related, multilevel symptoms and the factors (causes) that determine the formation and dynamic parameters of the syndrome. Primary and secondary symptoms are different in nature: in contrast to primary symptoms, secondary symptoms are purely psychological phenomena, both in terms of their nature and the mechanism of their derivation. Hence secondary symptoms are affected to a greater degree by psychological matters (Vygotsky, 1993; Luria, 1973). In the logic of the psychological syndromes proposed by L.S. Vygotsky and A.R. Luria, with the selection of primary and secondary symptoms, as well as the factors (causes) that determine the formation and dynamic parameters of the syndrome, it is possible to see a representation of a psychological syndrome as an open self-developing system (Zinchenko, Pervichko, 2013).

Therefore, the psychological syndrome analysis concept (Vygotsky-Luria school), corresponds to the ideals of postnonclassical model of scientific rationality, and could satisfy modern scientific standards.

Consequently, the psychological syndrome approach can negotiate issues in modern person-centered clinical practice.

2. Research Rationale

In practice of our empirical research, we use the Vygotsky-Luria syndrome analysis methodology, to provide the data for establishing an "extended diagnosis."

Our research interest in MVP patients is far from being accidental. MVP is widespread, affecting between 30.8% and 42.0% of the population (Barlett, Kirtley, Mangham, 1991; Scordo, 2007). Besides, there is a risk of development of serious complications, the most dangerous of which is a sudden death, which occurs mostly under conditions of emotional and physical stress (Cowan, Fye, 1989). Other relevant facts include the following: a pronounced dissociation between numerous subjective complaints of the patients, on the one hand, and the scanty data from objective studies, on the other (Joiner, Cornman, 1986); indications of widespread anxiety disorders accompanying MVP and the unpleasant inclusion of the formation of "functional MVP" within anxiety disorders and cases of a genuine reduction in the intensity of clinical symptoms after psychotherapy and antidepressant or anxiolytic treatment (Coplan et al., 1992; Scordo, 2007); there is even some evidence that such treatment may be symptomatolytic—that is, it may result in the complete disappearance of echocardiographic MVP indicators in patients suffering from panic disorders (Coplan et al., 1992).

The data, as a whole, reveal inconsistency and ambiguity and indicate the problematic character of the treatment of such patients from both clinical and a psychological point of view; these findings have generated great academic interest among

medical and clinical-psychological researchers in patients suffering from this form of heart pathology, and the findings also suggest an absolute relevance for formulation of psychosomatic hypotheses.

3. Research Objectives

The primary aim of this research was to describe the psychosomatic syndrome with MVP patients.

The present research relates *a psychosomatic syndrome* to an invariable set of psychological, psychovegetative, and genuine somatic symptoms. The structure and dynamics of a psychosomatic syndrome may be hypothetically shaped by a number of causes (factors[*]) of both psychological and psychophysiological nature.

4. Research Design, its Methods and Participants

This research was conducted in 1993-2011 and consisted of 3 stages:

1) The first stage of study involved 290 MVP patients aged from 18 to 37 (the average age was 25.6±1.1) and 73 healthy persons (no abnormality detected; the average age was 27.5±1.3). 71 MVP patients had an anxiety disorder (AD) symptoms.

2) In the follow-up study (conducted 15 years later) 92 MVP patients took part. Among them 32 persons attended systemic integrative psychotherapy on request (individual assessments), 60 persons received scheduled medication treatment (magnesium orotate, alprazolam).

3) In 2008-2011 the control diagnostics was conducted for 132 patients who had been included in research groups in 1993–1996. 28 patients still had AD.

The main method of this study was psychological syndrome analysis (Vygotsky-Luria school). Techniques for the qualitative and statistical data analysis of clinical-and-psychological follow-up study (conducted for 15 years) were used.

The research involved a methodological complex comprising various methods of psychological and medical diagnostics, as well as statistical data processing.

The medical part of the study involved a complex of diagnostic procedures aimed at establishing a diagnosis for each patient (all patients had an ultrasonic cardiogram), and establishing the degree of intensity of clinical symptoms and signs. Occurrence of the symptoms of autonomic nervous system was revealed with the Questionnaire for exposure of symptoms of the autonomic nervous system changes (Vein, 2003). An assessment of psychopathological status was conducted by ICD-10 procedure-coding criteria.

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[*]   In our study, the notion "factor" has two meanings. First, we use it in the context of methodology of Vygotsky-Luria syndrome analysis: factor as an underlying cause of a defect (a syndrome generating radical) (Luria, 1973). Further in this work we speak of a "psychological factor" retaining this particular meaning. Second, we may regard "factor" as a certain statistical construct that comes as a result of the mathematical procedure of factor analysis. We further refer to it as a "statistical factor."

Statistical processing of the data was conducted with application of various methods: calculation of mean values and standard deviation; calculation of the certainty of distinctions between samples based on indicators of the probability of distinctions between indicators (Student's *t*-test); and revealing correlations among investigated features in compared groups, employing the method of calculation of Spearman's rank correlation coefficient (r_s), and the method of factor analysis of variables (the principal components analysis with a varimax rotation).

The psychological study had a number of consecutive stages, each with independent tasks and the testing of self-contained hypotheses. The logic of stage fragmentation and the formulation of tasks and hypotheses for each stage were conducted in series, in accordance with the results of the preceding stages.

5. Results

5.1. *The main results of the study of MVP clinical picture.*

The examination of MVP clinical picture illustrated the highest representation of dysfunction of sympathetic and parasympathetic nervous systems as well as vascular and anxiety disorders (AD) within MVP. MVP patients significantly ($p<0.05$) distinguish from healthy subjects in terms of representation of 22 analyzed clinical symptoms and syndromes. The most intense characteristics in MVP picture are as follows: subjective feeling of cardiac rhythm disorder, cardialgia, headache tension syndrome, migraine, neurogenic hyperventilation syndrome, thermoregulation disorder, panic disorder and syncopal states. According to daily monitoring of blood pressure and electrocardiogram, MVP patients significantly ($p<0.05$) more often have tachycardia in day time, lability of heart rate and blood pressure, especially in stressful situations.

After 15 years we explored the reduction of clinical symptoms in MVP patients with AD who attended psychotherapy and/or took medical treatment.

5.2. *The stages of psychological research and its results*

The psychological study consisted of five stages.

The *first, tentative stage* of psychological research consisted of developing the range of psychological phenomena specific for the group of patients and defining the subject area as well as the hypotheses of the general study. This *stage* of study engaged 290 MVP patients and 73 healthy persons. Structured clinical-psychological interviews and psychological testing were the basic methods chosen for this stage. We used the Minnesota Multiphasic Personality Inventory (MMPI); and the Sixteen Personality Factor Questionnaire (16 PF).

The MMPI midrange profile for MVP patients is characterized by certain ($p<0.05$) differences with a standardization (control) group for F and K scale values and by highly certain ($p<0.001$) differences with healthy participants for the 1, 2, 3, 6, 7, 8, and 0 scales. Analysis of Cattell test results displayed a divergence between MVP patients and healthy participants on a number of items. We obtained lower ($p<0.05$) values for the A, C, E, F, and H factors and higher ($p<0.05$) values for the O, Q2, and Q4 scales.

The whole data set collected for this stage demonstrated that most MVP patients have a complex of emotional personality features that distinguish them from healthy participants; these features include increased anxiety, emotional lability, self-distrust, a propensity toward self-deprecation, increased sensitivity to one's failures, and a tendency to lose control over emotions. MVP patients are cautious when analyzing events and pessimistic in their views of reality; they may tend to complicate trivial matters. This set of characteristic features and their peculiar combination testify to an enduring state of emotional tension. In the subgroup of MVP patients with AD, these features were significantly ($p<0.05$) more pronounced.

As it is noted in some works on the subject, people displaying such emotional and personality features may be highly sensitive to psychological stressors. Results of the tentative stage defined the logic and direction of the study, its aims and tasks, for further stage.

The *second stage* consisted of experimental stress modeling. This *stage* of study involved 134 MVP patients and 73 healthy individuals. Experimental stress simulation was processed by exploring aspiration level (AL). A situation was set up that induced a state of mental tension. In the course of the experiment participants were asked to solve 12 tasks. As stimulating material Raven's Progressive Matrices, series D and E, were used. The selection of the most difficult, almost unsolvable, tasks was stipulated by the purpose of the experiment: to set up a stressful situation. In a preliminary interview a motivated attitude toward the work was induced in the participants, and the experiment was presented as a test of expertise. A time limit was set for task fulfillment. The blood pressure (BP) values of the participants were checked before and after the experiment, as were their values on the Spielberger reactive-anxiety (RA) scale.

Summing up this stage of study we may assert that all participants (both sound and unhealthy) exhibited a state of mental tension under the conditions of the stress-modeling experiment. In addition, a qualitative analysis of the data showed that most of the healthy participants (84%) experienced (during the modeled experiment) the *state of operational tension* (characterized by the dominance of the content-procedural motivation when undertaking tasks and an optimal level of BP and RA); most of the MVP patients (76%) experienced the *state of emotional tension* (characterized by the dominance of self-assertion motivation and pronounced RA and BP). It should be pointed out that the MVP group was not homogeneous; they demonstrated two opposite reactions that, for the most part, were not found in the group of healthy participants; these were "repressive" reactions, with an understated, rigid aspiration level (28% of patients with emotional tension), and "overanxious" reactions, in which pretensions either were not present under the conditions of the experiment or were unstable (34% of patients with emotional tension). In the subgroup of MVP patients with AD, these features were significantly ($p<0.05$) more pronounced.

The facts revealed at this stage of the study called for detailed scrutiny of the quality of the emotional experience for both the healthy and the unhealthy participants in the context of stress, and for an analysis of the ways they chose to overcome emotionally intense situations as well as characteristic features of the motivation sphere revealed in such situations.

All these tasks were covered in the *third stage* of our study. We checked the hypothesis that MVP patients differ from healthy individuals in higher sensitivity to traumatic events, peculiar ways of resolving emotiogenic situations, and a tendency to suppress concomitant feelings. Besides, the categorial structure of the emotional experience of MVP patients differs from the emotional experience of healthy participants. Emotional experiences were processed by implication of our modified version of Rosenzweig's method for studying reactions to frustration, which includes the stage of looking into the subjective semantics of emotional experiences (Nikolaeva et al., 1995).

The results showed that MVP patients differ from healthy subjects in significantly (p<0.05) greater number of potentially traumatic occasions and significantly greater (p<0.05) number of words (descriptors) which had been chosen for description of their feelings experienced in such situations (Table 1).

The psychosemantic analysis of qualitative characteristics of emotional experiences revealed by the participants in emotive situations demonstrated that for all subjects the description of suggested situations involved a predominance (p<0.05) of negative emotions. Nevertheless, a few essential divergences may be noted: in categorial structures of emotional experiences MVP patients revealed "fear," "anger," and "contempt" with a higher (p<0.05) frequency (Table 2).

MVP patients are certain (p<0.05) to more frequently reveal extrapunitive and self-defense reactions (E and ED types of reaction). They dramatized the generic stressful character of the situation, making some external reason the culprit of frustration and directing ill feelings toward somebody or something in the immediate vicinity. Impunity (M-directed reactions) was of no less frequency; patients were prone to describe the situation as being deprived of stress pressures (Table 3). Non-verbalized reactions of the patients (when asked to describe what they would think

Table 1. Mean group in dices for emotive situations and emotional descriptors, suggested by the participants

Index	MVP patients, survey1, n=134	MVP+AD patients, survey1, n=71	MVP patients, survey 2, n=96	MVP+AD patients, survey 2, n=28	Healthy subjects, n = 73
Total number of chosen situations	7.70±0.41*	8.23±1.13*, ^	6.57±0.78*, #	10.20±2.16*	5.36±0.5
Frequency of situation choice (%)	32.08*	34.29*	27.38*, #	42.5*	23.46
Number of descriptors per situation	8.5±1.4*	10.57±1.26*	7.35±1.4#	10.11±2.12*	7.10±1.35

* Differences are certain when compared to the control (standardized) group (p<0.05).

^ Differences are certain when 1st stage data compared to 2nd stage data of MVP patients examination (p<0.05)

Differences are certain when MVP patients without AD compared to MVP patients with AD (p<0.05)

Table 2. Frequency in representation of categorial structures of emotional experience by participants in frustrating situations (%)

Categories of emotional experiences	MVP patients, survey1, n=134	MVP+AD patients, survey1, n=71	MVP patients, survey 2, n=96	MVP+AD patients, survey 2, n=28	Healthy subjects, n=73
Joy	0	0	1.2	0	3.1
Anger	26.3*,^	28.9*	18.6#	30.1*	19.0
Shame	9.5	9.1	9.3	10.4	8.6
Contempt	11.1*,#	7.2	10.6*	8.7*	6.1
Fear	17.2*	18.7*	13.2	14.2	11.3
Astonishment	8.1*,^,#	5.2*	16.5#	6.9*	14.8
Sadness	27.8*	30.0	30.6	29.7	37.1
Total number	100	100	100	100	100

* Differences are certain when compared to the control (standardized) group (p<0.05).

^ Differences are certain when 1st stage data compared to 2nd stage data of MVP patients examination (p<0.05)

Differences are certain when MVP patients without AD compared to MVP patients with AD (p<0.05)

about in a situation of frustration) revealed even more explicit extra-punitive reactions (E=60.5%), with a focus on self-defense (ED=60.8%); these reactions distinguish them from healthy participants (p<0.05). Intropunitive reactions (when a patient admits his/her blame or assumes responsibility for negotiating the situation) appear with no less frequency (I=31.2) (Table 3). Analysis of the obtained results

Table 3. Frequency analysis of the categorial structure of verbalized and non-verbalized reactions to frustration (%)

Index	Verbalized reactions to frustration		Non-verbalized reactions to frustration	
Categories	MVP, n=134	Healthy subjects, n=73	MVP, n=134	Healthy subjects, n=73
O-D	20.2	21.6	15.9	17.5
E-D	55.6*	37.6	60.8*	39.6
N-P	24.2*	40.8	23.3*	42.9
Total number	100	100	100	100
E	52.9*	44.3	60.5*	45.4
I	16.0*	40.9	31.2	40.1
M	31.1*	14.8	8.3	14.5
Total number	100	100	100	100

* Differences are certain when compared with the control (standardized) group (p<0.05)

testifies to the fact that imputation and even unmistakably aggressive reactions to the interlocutor (involving rage and aggressive thoughts) are most common ways dealing with frustration among MVP patients.

The analysis of data collection suggested that MVP patients differ from healthy subjects in a more frequent choice of frustrating situations and more intense negative emotional experiences as well as liability to suppress negative emotions. The most typical way for MVP patients for coping frustrations is to blame others and even act aggressively in some cases. Notable, that mentioned patterns are more distinct specifically in blaming situations, which are considered as the most traumatic ones.

The described characteristics of emotional experiences of MVP patients are significantly ($p<0.05$) more intense in MVP patients with AD symptoms (Table 1–2).

The reexamination of MVP patients after 15 years proved detected characteristics of emotional experiences under frustration to be quite stable.

Put together, these results were interpreted as manifesting the hypersensitivity of MVP patients to emotiogenic situations; this hypersensitivity was caused by revealed features of the autonomic nervous system, as well as by particular features of their motivation sphere, so that the failure-avoidance motive appeared as a principal sense-making motive in potentially traumatic situations. As is well known, this reaction leads to frustration of the need to maintain self-approval. The above-mentioned peculiarities in the motivation sphere presumably cause MVP patients' state of emotional tension in many contexts that they regard as potentially traumatic.

As a step further, we assumed that MVP patients might be prone to employing emotionally intense strategies as well as strategies of "evasion" as a typical way of coping with traumatic events not only in the experimental context but in everyday life.

To check this hypothesis, we conducted further research at the *fourth stage* of our study. We undertook an analysis of the coping strategies of the participants in emotiogenic situations with the aid of the Ways of Coping Questionnaire (WCQ) (Folkman, Lazarus, 1988).

The results of coping strategies analysis by WCQ showed, that MVP patients during first test applied for the coping strategy called "escape-avoidance" (59.7±3.4 points, rank meaning 1), **"distancing"** (56.9±4.2points), "**confrontive coping**" (54.8±2.3 points) and "**seeking social support**" (53.7±3.9 points) which they commonly used in difficult life situations. Frequency of adherence to these coping strategies is significantly ($p<0.05$) higher than in the control group. The strategy "positive revaluation" is used significantly ($p<0.05$) rarely.

These facts confirm our hypothesis about the specificity of the motivation sphere for the majority of MVP patients when the structure of the achievement motive is shaped into domination of the failure-avoidance motivation. The fact reveals the real urgency of making close observations of personality features of MVP patients.

This task was accomplished in the *fifth stage* of the empirical study. The following methods were used: the Thematic Apperception Test (Murray, 1943/1971), the

Sentence Completion Test (Sachs, Levy, 1950), and the Life *Style Index (LSI)* (Plutchik, Kellerman, Conte, 1979).

A comprehensive qualitative analysis of the results achieved in this stage revealed the following tendencies: most of the MVP patients voicing health complaints were distinguished by a highly pronounced avoidance motive along with the lack of the ability to distinguish emotions and needs; they had difficulty with intellectual mediation and control over emotions, poor sensitivity in interpersonal relations, and low capacity for empathy. The patients with "overt overanxious" reactions were characterized by the highest level of inefficient control and lack of ability to distinguish their emotions and needs. These characteristics might be the reason for their inability to reduce the high inner tension and anxiety that appeared in their extrinsic behavior.

The MVP patients resorted to a set of defense mechanisms, among which "rationalization", "denial", "projection", and "reaction formation" usually prevailed.

5.3. Syndrome analysis of multidisciplinary clinical-and-psychological study results in MVP patients.

At the *conclusive stage* of the study statistical processing and qualitative analysis of the whole set of clinical and psychological data were undertaken, and a hypothesis about the formation of a psychosomatic syndrome in MVP patients was tested.

As a result of factor analysis, which included 140 psychological and clinical characteristics, we identified 4 statistically significant factors, that explain 79.34% of dispersion and related analyzed clinical and psychological characteristics. These factors are as follows: 1) factor of clinical-psychological interactions (the only one among other established factors that showed maximum loading, covering both psychological characteristics of the MVP patients and indicators revealing the profile of clinical symptoms and signs); 2) factor describing emotional experience characteristics in emotiogenic situations; 3) factor describing coping strategies in traumatic situations; 4) factor of emotional disorganization of behavior/emotional control.

Analysis of the statistical factor structure as well as quality analysis and interpretation of the whole set of the results of the clinical-and-psychological study (A.R. Luria's principles for psychological factors (causes) selection, which determine the logic and structure of a neuropsychological syndrome), lead to the conclusion that MVP patients have a quite stable and comprehensive complex of clinical and psychological characteristics that can be defined as a *psychosomatic syndrome*.

This syndrome comprises the following clinical symptoms and syndromes: subjective manifestations of cardiac arrhythmias, panic attacks in anamnesis, the syndrome of neurogenic hyperventilation, some degree of intensity of vegetative disorders, some degree of intensity of clinical disorders, severity of pain syndrome, and indicators of cortisol level in blood serum. The syndrome structure is statistically formed by the following psychological symptoms: domination of the motive of failure avoidance, unsatisfied self-approval need, a complex of indicators of overt emotional tension in stress situations, insufficient or excessive control over motivations and emotions, characteristics of the emotional experience in

stress situations (domination of the emotional categories "fear" and "anger," which in most cases reveal no outward expression), suboptimal means of resolution of emotiogenic situations.

The results of qualitative and statistical analysis proved that the *most important syndrome-establishment factor (radical) is a specific emotionality and dysfunction of emotion regulation and emotional control* in MVP patients (excessive emotional repression with insufficient reflection of emotional experiences).

The analysis of the data lead us to assert that *features of the motivation sphere of MVP patients appear as a second psychological syndrome-establishment factor (radical): these are domination of the motive of failure avoidance and unsatisfied self-approval need.* This conclusion was drawn on the basis of Luria's principles for psychological factors (causes) selection, which determine the logic and structure of a neuropsychological syndrome, and on the interpretation of the results of statistical factor analysis (the complex of characteristic psychological features, which reflect features of the motivation sphere, was represented in the structure of the first three statistical factors with high factor loadings).

The reexamination (after 15 years) of the patients demonstrated that the psychosomatic syndrome has a stable structure, despite either positive or negative dynamics in the patient's state. This leads to its prognostic possibilities: the patients assigned to the "risk group" for plausible symptomatology complications in the clinical and psychological signs described above, as well as the whole complex of clinical and psychological features, confirmed our hypothesis of the "hardening" of clinical MVP manifestations under conditions of emotional pressure when medication and psychological aid were not provided. Meanwhile, psychologically "safe" patients displayed generally positive dynamics and a reduction of MVP signs in a number of cases.

Psychotherapy in our study showed good results: analysis of the dynamics in the emotional state of the patients (before and after the therapy) using psychological dimensions revealed a tendency toward the reduction of anxiety level. 72,2% patients attended psychotherapy demonstrated valid improvements of QOL self-rating, as well as the reduction of anxiety level. Patients who attended psychotherapy had a better ability in recognition of emotional experience, and the development of personality reflection. Physical examination of the patients revealed a significant ($p<0.05$) reduction in frequency and intensity of panic attacks and heart pain (especially those provoked by emotions), as well as loops of thermal control among patients who had been undergoing a psychotherapy. Moreover, ultrasonic cardiography testified to a significant ($p<0.05$) reduction in the depth of MVP (from 4.2 ± 0.2 mm to 3.8 ± 0.2 mm) among patients who had been undergoing a long-term psychotherapy. The decrease of prolapse depth was observed in all the psychotherapy patients (Pervichko, Zinchenko, Martynov, 2013). The results of our research allow selecting patients with MVP, who are recommended because of psychological indications for the psychotherapy.

In this way, the consistent implementation of the logic of construction of psychosomatic syndrome in patients with mitral valve prolapse allows us to give a psychological interpretation of the described clinical phenomena, corroborates the hypothesis of the possibility of "functional MVP" in anxiety disorders (Coplan et

al., 1992), and enables production of "expanded diagnosis" and the definition of the forecast development of the person in the disease conditions (Vygotsky, 1993, Mezzich, 2007; Mezzich et al., 2010).

To indicate directions for further research in the context of present discourse, it is important to point out that psychological syndrome analysis as the methodological approach, exhibit a considerable theoretical methodological potential in the implementation of a person-centered integrative diagnostic model.

6. Conclusions

The presented research showed that psychological syndrome analysis concept (Vygotsky-Luria school) may be regarded as a relevant theoretical and methodological basis for solving issues in the field of psychodiagnostics and psychotherapy and for the development of models of person-centered approaches to diagnosis and treatment.

Verification by means of these hypotheses has been performed in our research. We carried out an empirical study constructing a psychosomatic syndrome for 290 patients with mitral valve prolapse, applying principles for psychological syndrome analysis (Vygotsky-Luria school) and statistical data analysis. The results of qualitative and statistical analysis proved that the *most important syndrome-establishment factor (radical) is a specific emotionality and dysfunction of emotion regulation and emotional control* in MVP patients (excessive emotional repression with insufficient reflection of emotional experiences). The *features of the motivation sphere of MVP patients appear as a second psychological syndrome-establishment factor (radical): these are domination of the motive of failure avoidance and unsatisfied self-approval need.* This conclusion was drawn on the basis of Luria's principles for psychological factors (causes) selection, which determine the logic and structure of a neuropsychological syndrome, and on the interpretation of the results of statistical factor analysis.

We maintained that this approach, applied in theoretical and practical fields of clinical psychology and mental health care is highly efficient at the current stage of the science evolution due to prospects revealed by s new methodological context of postnonclassical model of rationality and a comprehensive character of the cultural-historical concept regarding an individual and his mind as a self-developing open systems.

Results of the present study do not only extend the limits of scientific notion of mitral valve prolapse, they help individualize strategies of medical and psychotherapy treatment for MVP patients. The results bring in new issues urgent for scientific studies in clinical psychology and medicine at the contemporary stage of science development.

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The siege of Leningrad (1941–1944): memories of the survivors who have lived through the trauma

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The article has discussed the Leningrad Siege (1941-1944), focusing on the individual and collective memories of survivors who had lived through that trauma during their childhood. Thus far there has been no psychological investigation of the feelings of extreme deprivation caused by that Siege, despite the reams of material published on Leningrad under siege. To deal with this shortfall, the critique has considered the effect of that experience on the future lives of the people concerned. The basic methodology, the paper maintains, combined quantitative and qualitative approaches and involved a comparison of two equal-sized groups: the experimental group, comprising 60 war survivors who lived through the Siege; and the control group, comprising 60 war survivors who were evacuated from Leningrad during the Siege and consequently did not experience the trauma. The review related that the groups were matched by age and by gender distribution. Data for the Interpretative Phenomenological Analysis-based qualitative analysis (QA) were collected according to psychometric measures (containing scales for depression, general satisfaction with life, and stress) applied in semi-structured interviews. The QA, for its part, used methods such as correlation, factor- and cluster-analysis to measure data segments. The nature of the suffering and the persistence of the human threat (past and present) were reconstructed within the framework of the psychological experiences (under extreme conditions) faced by the experimental group. The report, in conclusion, has stated that these experiences were evaluated via psychoanalytic tools dealing with child development, mourning and symbolization of traumatic events. These enabled it to identify psychological phenomena such as child grief and the impact of trauma on the adult life of the former Siege victims.

Key words: Siege, strain trauma, cumulative trauma, child development, attachment, traumatic disorganization, resilience

Historical Background

The Siege of Leningrad lasted from 1941-1944 after advancing German troops had virtually surrounded the city. According to official data, some 2.8 million people, including 400,000 children, were trapped in the city at the outset of the

Siege. The initial winter was the most difficult, with intensive aerial attacks and prolonged artillery bombardments causing electric failures and residential heating blackouts. Under these conditions, the interior walls became covered with white frost. In January 1942, during the first winter, temperatures plummeted to minus forty Celsius, freezing the municipal water pipes and disrupting the potable water supply. To overcome the water shortfall, people either melted snow or drew water from holes hacked in the ice of the frozen Neva River and the nearby canals. As of Nov. 20, 1941, the official daily rations had fallen to 250 grams of bread for essential workers vs 125 grams for non-essential workers and dependents (including children), i.e. little more than a slice of bread. The dead accumulated in the streets and homes, with many of the starving even lacking the energy to speak. Information about what was happening was extremely limited; it remains an issue of historical conjecture why the municipality had provided only minimal food supplies. Dmitri Likhachov wrote, "Germany prepared for the Siege of Leningrad, expecting the urban authorities to surrender" (Likhachov, 1999, p.161).

Design of the Study

The present study collected participants' memories of their wartime experiences, with the long-term objective of gaining insight into how they had felt during the Leningrad Siege and whether the traumatic incidents had affected their personalities. A total of 120 elderly people were interviewed for the research paper in 2004, with these subdivided into two major groups: those who had lived in Leningrad during the Siege (the experimental group) and those who had been evacuated and experienced the war elsewhere (the control group). Both groups — 37 men and 83 women — were identical in terms of age and gender distribution. The data obtained were subjected to a quantitative analysis (of correlation, factor and cluster) and a qualitative analysis (combination of content analysis and interpretative phenomenological analysis), with particular attention paid to the differences between individual experiences of the two groups. As in all studies of this kind, the participants were questioned about traumatic events they had experienced when they were relatively young. Many participants had vivid memories of the events, but experienced extreme difficulty in recalling them. Almost 50% of the people who had at first agreed to take part in the study eventually bowed out as a result of the extreme emotions attached to their memories. In other words, even sixty years after the event, many blockade survivors could not discuss it openly. Their response was similar to that of prisoners from German concentration camps, for whom silence and repression of trauma often remained the only bearable options. The protocol's questions concerned factual details (the birthdate, family members, and living conditions) during the blockade while the interviewees remained in Leningrad; and wartime memories (earliest childhood recollections and memories of the period in the immediate aftermath of the war).

Semi-structured Interview Questions

(Note: questions for the control group have been reformulated as questions about the war in general):

1. Please describe in a few words your mother or the person who cared for you in that role.
2. Please describe in a few words your father or the person who cared for you in that role.
3. Why did Mama praise and scold you during your childhood?
4. Why did Papa praise and scold you for during your childhood?
5. What was your favorite book?
6. Which was your favorite literary character?
7. What was the most difficult thing for you during the Siege?
8. What was your happiest moment during the Siege (apart from its ending)?
9. What do you remember dreaming about during the Siege?
10. What did you know about the enemy?
11. What helped you survive?
12. Did your attitude towards yourself change after the war?
13. Did your attitude towards people in general change after the war?
14. Did your attitude toward food change after the war?
15. Which personality traits do you think helped you overcome difficulties in your life?

In addition, several questions were based on three short scales: Stress Scale, Scale of General Satisfaction with Life, Depression Scale.

Quantitative Analysis: Findings

Age and war trauma: At the outbreak of the war, the average age of children in the control group was 6.2 years versus 8.6 years in the experimental group (the differences are statistically significant, $p<0.001$), though the concept of age partly loses its significance for Siege children. "We were not children, but tiny old men and women. We played at war and at being nurses. Smiles were very rare. All of us were equally skinny in the sauna. We went to a common sauna (*this would have been completely out of the question prior to the war — M.G.*). There was no gender, no age; it would not have been possible to distinguish a granny from a girl or a boy" (participant A.N.). Both groups of children suffered enormously, but the answers given by the participants for the question, 'What was the most difficult thing for you during the Siege (experimental group) or war (control group)?', were different (Table 1).

Table 1. Hierarchy of frequencies of 'most difficult thing' (question № 7) for both the experimental and the control groups (n=120)

Rank	Control Group	Experimental Group
№ 1	Worry about war events, about success of Soviet Army	Hunger
№ 2	Hunger	Bombing
№ 3	Cold	Visibility of death
№ 4	Disorder in life during the evacuation, lack of suitable clothing, lack of toys	Death or fear of death for members of child's family
№ 5	Difficulties in socializing in a new place	Fear of being killed or harmed by other people
№ 6	Loss of significant intimates (death)	Other losses
№ 7	Separation from intimates	Cold
№ 8	Father's arrest	Darkness
№ 9	Things beyond your capacity (e.g. 'long walk to school')	Fear of staying alone
№ 10	Threat to studies	Helplessness
№ 11	Bombing	

The evacuated children (control group) were not exposed to the threat of being killed or harmed by other starving people; nor did they suffer from constant darkness which, as the interviews showed, ranked as an important source of suffering. On the other hand, the children who stayed in Leningrad (experimental group) did not have problems in adjusting to a new place; they had already left behind their friends, books, clothes, potential resources, personal belongings, etc. However, they were often isolated, staying alone in their flats, waiting for their care-givers to return with food, and, when they did communicate with other children, found little energy left to do so. As the levels of suffering increased, so did the feelings of isolation. If, for the control group, the challenge was to adjust to the loss of their earlier life patterns and to new circumstances, for the experimental group, the issue was simply to survive. Their mother (or sometimes father) was a central figure in their battle with visible death. In addition, the Siege children were exposed to death as a daily occurrence: they saw the corpses of neighbors, family members, classmates, strangers on the street, and trucks filled with naked frozen bodies.

To cope with that task, these children had to display extraordinary levels of strength, responsibility and social adjustment.

The quantitative analysis was conducted with the following list of variables:

Independent variables:

№ 1. Group (Siege or Evacuated)

№ 2. Gender

Dependent variables:

№ 3. Age at outbreak of the war

№ 4. Length of Siege experience (in months)

№ 5. Number of family members at outbreak of the war

№ 6. Number of relatives lost as a result of the war

№ 7. Two parents or one at outbreak of the war

№ 8. Number of mentioned tragic events connected with the war or Siege

№ 9. Number of 'significant others' in earliest childhood re-collection

№ 10. Age at time of earliest childhood re-collection

№ 11. Polarity of earliest childhood re-collection (positive, negative, neutral)

№ 12. Resilience under stress

№ 13. General Life Satisfaction

№ 14. Depression

№ 15. Number of relatives lost for reasons unconnected with bombing or Siege during childhood and adolescence

№ 16. Number of mentioned tragic events unconnected with bombing or Siege during childhood or adolescence

The correlation analysis (based on Spearman's and Pearson's coefficients) has revealed numerous links between the Siege experience and other variables. It also has unveiled significant *positive* correlations between the length of the Siege experience and the number of relatives lost as a result of the war (var. № 6: r= 0.33; p<0.001); the number of mentioned tragic events (var. № 8: r= 0.29; p<0.01); the number of 'significant others' in early childhood re-collections (var. № 9: r=0.29; p<0.01); and the resilience under stress (var. № 12: r=0.30; p<0.01). By contrast, the correlation analysis has unveiled significant *negative* correlations between the length of the Siege experience and the time of the earliest childhood re-collection (var. № 10: r=0.32, p<0.01); and the number of mentioned tragic events unrelated to the bombing or the Siege (var. № 16: r=0.35; p<0.001); and depression (var. № 14: r=0.30, p<0.01).

Therefore, the correlation analysis' chief, if unexpected, interpretable results associated longer deprivation under Siege conditions with a higher level of stress resilience and a lower level of depression in the survivors' present life. In essence, some Siege survivors mentioned in their interviews that they have achieved in the 'balance of their life an additional token, second chance or second life' (M.F.). But 'nothing could be compared with the Siege experience, which represented for the Siege survivors the most extreme condition that they could stand' (B.R.).

In addition, the interviews assessed those participants who claimed, "I still cry at night"; "I am still hungry"; "I still feel a horrible dependence on shopkeepers"; "I can't stand the loud noise of fireworks; and "I become panicky as I was during the air raids"?

Table 2. Cluster analysis ('The nearest neighbor' method) for the whole sample (n=112 from initial 120).

Variable N	(M) for cluster №1; n=34 (55% of Siege sample)	(M) for cluster №2; n=38 (43% of Siege sample)	(M) for cluster №3; n=17 (36% of Siege sample)	(M) for cluster №4; n=8 (25% of Siege sample)	(M) for cluster №5; n=15 (44% of Siege sample)
№3 Age at outbreak of war	4	9	10	7	7
№4 Length of Siege experience (*in months*)	17	12	15	7	9
№5 Size of family at outbreak of war	5	5	4	5	4
№6 Number of relatives lost as a result of war/Siege	0,6	1	1,3	I 1,3	0,6
№7 Family intact/not intact at outbreak of war	1	1	0,7	0,5	1
№8 Number of mentioned tragic events connected with the war or Siege	5	6	10	9	5
№9 Number of significant others in first childhood memory	1	2	3	1	2
№10 Age at time of first childhood memory	4	5	6	4,5	4,2
№11 Polarity of first childhood recollection	4	4	0	2	3
№12 Resilience under stress	4	7	2	4	4
№13 General life satisfaction	20	24	16	22,5	19
№14 Depression	4	3	6	4	5
№15 Number of relatives lost as a result of political arrests	0	0,1	0,9	2,2	0
№16 Number of relatives lost for reasons unconnected with bombings or Siege during childhood or adolescence	0,4	0,25	0,2	1,5	0,2
№17 Number of mentioned tragic events during childhood or adolescence that were unconnected with war	3	2	2	3	2

This apparent contradiction, which challenged the initial design of the study (its division into experimental and control groups), led to the use of cluster analysis to unveil potentially new participant sub-samples. Table 2, for instance, summarized the results of this analysis. One hundred and twelve participants were found to constitute five clusters, with members of both initial groups (experimental and control) found in varying proportions in each cluster.

The cluster analysis comprises three groups that constitute the major part of the sample of war survivors (both control and experimental groups):

- 34 rather small children (4 years old on average) at the outbreak of the war, who remained in Leningrad a long time (17 months on average). They showed mild levels of resilience under stress, depression and general life satisfaction in old age (at the time of their interviews);

- 38 older children (9 years old on average), who remained in Leningrad for a shorter period (12 months on average). They showed the highest level of resilience under stress, a low level of depression and a high level of general life satisfaction in old age (at the time of their interviews).

- 17 slightly older children (10 years old on average). They mentioned the highest number of tragic events (10 on average) in their interviews, with a very high number of family members lost to political repression (0.9). This implies that almost each participant had lost at least one family member because of a political arrest. They also dated their earliest memory quite late — at age 6, on average — which may be a manifestation of childhood amnesia. In addition, they showed a very low level of resilience under stress, a rather high level of depression and an average level of general life satisfaction in old age (at the time of their interviews). Only this group showed a high percentage of negative early childhood memories. Perhaps this is the point where their childhood trauma revealed itself.

The major conclusions drawn from the quantitative analysis could be formulated as follows:

- A majority of early childhood re-collections were positive: often they were about doing something associated with parent(s) or playing with other children; about father coming for a short visit; about somebody bringing home food; and about other important gifts, such as a first book. The negative memories included mother's crying, or in other cases her numbness; and hearing that war had broken out. For example, 4-year-old Zina stated that during the Siege "a huge rat sat on the cold stove in the kitchen and looked at me with arrogance."

- The suffering of both groups of children was different, if the suffering could be compared. The experimental group (that remained in Leningrad) reported that the most difficult things for them, apart from hunger, bombings and cold, were the visibility of death; the darkness during the long winters; death or fear of death for family members; fear of being killed or harmed by other people; fear of staying alone; and helplessness.

- The experimental group showed statistically significant differences in their emotional state in their present life, namely a higher level of resilience under stress and life satisfaction. Contrary to one of our initial hypotheses, they did not show a higher level of depression than control group (the evacuees).

- Are the now-adult experimental group ('blokadniki') victims more emotional about their childhood during the Siege? First of all, the volume of verbal material that they provided in interviews was significantly higher (3-6 times) than the material provided by the control group. This might be because their wartime trauma was officially recognized and accepted by Soviet society, while that for the control group was not.

- The process of initially recruiting participants showed that at least one-third of those approached were not yet ready to openly discuss their Siege experiences. Silence remained a safe shelter for them, as it had been for concentration-camp survivors after World War II.

- Beyond the children's war experience, a few other factors revealed themselves as important: the child's age at the outbreak of the war; the length of time the child remained in the blockaded city; and the number of traumatic events experienced or remembered.

Content Analysis

The elements of trauma, found in the children's stories, often remained hidden from the individual subjects. The latter, however, though out of contact with their suppressed feelings, did have a vague sense that the events described were not simply details of the wartime way of life.

When the subject identified strongly with the lost object or when the child merged with the object, he/she could experience the feeling of dying or annihilation. In fact, many current survivors are still unable to talk about their childhood experiences. At least for part of them, this 'reactive mechanism' demonstrates a defensive rejection of their past and an inability to cope with the 'Siege' topic.

A recent discussion on 'trauma understanding' supports the psychoanalytic concept that the 'encapsulated trauma' has a negative restrictive effect on a person's life and leads to psychic retreat (De Steiner, 1993). Split-off elements of traumatic experience become unconscious, often forcing the person to lose direct contact (memory) with them. Nevertheless these split-off elements can be recognized in actions and physical symptoms; they even cause the quality of psychic reality to deteriorate. One way of relating to suppressed material would be to remember it subconsciously. This method would enable these elements of trauma to stay alive but not permit the person direct access to them. Consequently, they would assume a more bearable (less painful) character.

This document revealed that Siege survivors demonstrate elements of their trauma fixation in adult life. Nevertheless they are aware of their vulnerability and fragility; they also display a high level of emotional sensitivity and empathic understanding of others.

One of the first traumas that children are exposed to is the loss of a significant other, called 'object-loss' phenomenon. Anna Freud, who worked with traumatized children during and after World War II, stressed that children subconsciously could use regressive behavior instead of contact with their actual feelings if the latter felt intolerable. This is one of the few ways for a child to withdraw his own feelings (Jacobson, E., Spitz, R.A., Waelder et.al., 1954, p. 67). Other publications also have confirmed this observation. For example, Green and Kocijan-Hercigonja (Green, Kocijan-Hercigonja, 1998) have explored coping mechanisms in children traumatized by war, noting that 'these children are vulnerable to post-traumatic stress disorder (PTSD), phobic anxiety, depression, and alienation'. Macksoud and Aber, for their part, found that exposure to violent activities (such as shelling or militia fire) caused the deepest trauma that children experienced during the war in Lebanon. Moreover, these authors have argued that 'some children become extremely disorganized after being exposed to a direct war trauma' (Macksoud, Aber, 1996, p.74). All of the aforementioned 'negative' symptoms, particularly alienation and disorganization, could be viewed as a form of regression. Our findings, however, did not support this conclusion. One of our participants (O.N., aged 22 at outbreak of War), achieved a promising career during the war. He stated, when asked directly, that institutionalized children had not shown regressive tendencies in their behavior. They had, in fact, stressed an opposing tendency: psychologically, war children had matured rapidly, following the adults 'heroic patterns of behavior'. This rapid maturation had helped them to survive.

On a theoretical plane, however, war trauma could be used to explain not only the dissociation of mind (Fonagy, Target, 1995), but also the principal phenomena of borderline conditions in children. For example, a child had not developed trust in adults because he had not been protected against mental and physical pain. Moreover, the anxiety and aggression of such an unprotected child had remained untamed. The child, in consequence, had not learned to resolve his/her love-rage conflict because his/her beloved mother had not addressed the child's basic requisites to be fed, loved, heard and understood. As a result, his/her self-esteem had deteriorated, leaving the child to experience loneliness since he/she was not important enough for his mother.

Other Leningrad children and their mothers, by contrast, have shown extremely intensive bonds of mutual identification. These could partially be explained by the fact that the Ego boundaries of both had weakened due to various strong deprivations causing the distinctions between self and object to blur. But in many other cases, they had exhibited real devotion to each other.

In many cases the interviews showed that a mother was psychologically present ('internalized') in a child's mind and this assisted him/her to survive war-associated sufferings. Other children had conceived an individual explanation of this war-related enigma, with this helping them to survive. Even the loss (death) of a loved one or loving person could be a maturing experience, often associated with an increased capacity for empathy, caring for others and being altruistic. One Leningrad girl, for instance, had organized her father's and her own evacuation; they survived the ordeal and even met the mother after the

war when this woman was released from her camp (Alexandra Vladimirovna, aged 11 at outbreak of war, was interviewed in 2004). This life story reminds the reader of Winnicott's concept of a 'holding environment': once learned and internalized by the child, it could later on be used by him/her for survival (Winnicott, 1960). This story gives remarkable illustrations of other psychoanalytic concepts, such as Kohut's 'mirroring response', when a mother's understanding and correct response to her child's feelings helps the child to feel he/she exists (Kohut, Wolf, 1978).

Our study has shown that the meaning of trauma has broad variations. The initial study design — a comparison of two groups of children (experimental group, or Siege survivors; and control group, or evacuation survivors) — has provided limited results. For both groups, the number of losses (regardless of how the child survived the war) seems to be the most significant factor that has shaped their level of traumatization. Some children who had lost parents showed no signs of arrested development and could be sublimating trauma through positive achievements. Others, by contrast, might still be fixated at the point of trauma. The trans-generational transmission of war trauma (Fonagy, 1999) could be viewed in such phenomena as oversensitivity toward war-associated topics among some adult children of survivors; 'food anxiety' among others; and behavioral changes, such as specific war-related phobias, among people born after the war.

Acknowledgements

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BOOK REVIEW

Review of the book by Vyacheslav A. Ivannikov "A New Introduction to Psychological Thinking"

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First, a disclaimer: the book I am about to review is written by my mentor. Call me biased. I was fortunate enough to attend the lectures presented in this book. It was 35 years ago. I vividly remember how sought after was a good set of lecture notes from these lectures. Now this call has been answered by the author himself. It's been a long wait, and the new generations of Russian-speaking psychology students — and instructors alike — are so much better off for it.

V.A. Ivannikov's "Bases of Psychology: A Lecture Course" (Moscow: Peter Publishing, 2010, 327pp.) is an unusual book. It is not a textbook, though it represents one of the most complete, long-running and influential lecture courses in introductory psychology known in Russian print. It is not a "state of the art" volume, either, despite offering highly original syntheses of the literature on advanced topics such as self-regulation and will-power.

The book builds on the foundations of Vygotsky's (1978, 2012) cultural-historical and Leontiev's (1978) activity theory to present an evolving conceptual framework that underpins the modern science of psychology. Whilst grown out of the well-known tradition approach (see Aidman, 1995; Peim, 2009; van der Veer, 2008), the lectures bear an unmistakable mark of the author's original take on the issues under consideration, with some lectures resembling more of an original research paper than a textbook chapter.

The book also follows another tradition — the one that is well established in the English print but rarely seen in Russian — the tradition of a systematic introductory text focused on supporting student thinking. The dominant impressions from Ivannikov's text are similar to those from Hilgard's (1953) *Introduction to Psychology* and its multiple subsequent editions. Each chapter articulates key constructs supporting contemporary understanding of human (and animal)

behaviour and all major mental phenomena, with the coverage rivaling the most comprehensive of introductory texts. It then examines the method and the empirical substance that gave rise to this understanding and articulates the future steps in conceptual and empirical investigation that are likely to advance it. Likewise, the theoretical and empirical pitfalls awaiting students of psychology are equally well articulated, and the reader is left well equipped to avoid stepping on the same rakes twice when framing psychology-related questions and searching for their answers.

The book is a fresh attempt at presenting the often intimidating amount of Introductory Psychology material in a stimulating and thought-provoking fashion. The coverage of traditional introductory topics is comprehensive, and the logic of presenting each topic from both evolutionary and socio-cultural perspectives is well placed to help students and instructors to work through this critical intersection of the discipline: the interaction between Brain and Culture. The introduction of the conceptual distinction between MEANING and MECHANISM is extremely important in this context, and the text's balanced attention to the complementing roles of both is appealing.

Ivannikov's attempt at placing psychology in the context of biology and culture is not new (see Westen, 1996, for one of the many successful earlier attempts). But the text goes beyond the comfortable "a bit of both" approach in explaining cultural and biological determinants of human behaviour. Its emphasis on the mechanisms mediating the interaction between the brain and social context is thorough and convincing. The book's emphasis, not surprisingly, is on activity theory-derived principles of MEDIATED interaction (there is always a third factor such as prior experience, learning, etc.) and focusing on specific cognitive and motivational mechanisms of this mediation (such as action goals, motives, anticipation and operational constraints for execution).

The chapter sequence may seem unusual for a traditionalist. For example, chapters on cognitive processes (sensory and perception, thinking, attention and memory) are left to the very end of the sequence, preceded by a group of chapters on motivation and personality (including emotions, self-regulation/will-power and a whole lecture on the objects and subjective representation of needs). The chapters on the levels of consciousness are included into the front-end fundamentals of Part One of the book, along with lectures on the object and methods of the science, animal behavior and human action, conditioning, and higher mental functions. The front end is well supported by an evolutional analysis of behaviour and mental functioning, as a well as by a concise yet thorough exposition of key constructs of Leontiev's activity theory — activity, action and operation — driven by motives, goals and conditions, respectively.

Those who were, like me, privileged to see the "titans" of Russian psychological science in action, would attest to their wildly differing lecturing styles. Alexey N. Leoneiev's lectures were inspiring yet almost threatening by their complexity. So were Eugene N. Sokolov's lectures. Alexander R. Luria's lectures were mesmerszing by their unattainable clinical brilliance. Ivannikov's approach represented a quality disciple's interpretation: it was less spectacular but more systematic and perhaps

more instructive — it managed to combine scholarly sophistication with accessible and engaging presentation style that was poised to keep the reader both enthused and well-directed.

All good introductory texts are pitched at intrinsic interests of students to spark and maintain their engagement. Hilgard's (1953) text appealed to those interested in developmental and clinical applications. Ivannikov's lectures emphasise evolutionary foundations of adaptive action and the mediating effects they exert on most mental processes. The author has taken some risk in presenting some cutting-edge research material which may be controversial or not fully confirmed (such as the segment on self-regulation and will-power). But it seems consistent with the text's aim explicated early in its Preface, which is to engage students in THINKING as psychologists and about psychology and its principles, rather than being swamped by its facts. The facts are accurately presented, too, but they become instrumental and hence do not have to be limited to the obvious or to the undisputed truths. Most crucially, the book charts important thinking habits required of anyone practicing the science or the discipline of psychology — with some clear guidance on how to build them.

One of the strengths of Ivannikov's text is that it achieves a balanced coverage of the subject matter, without sacrificing the presence of a strong and well-articulated author's position. Making the author's position explicit brings that personal touch that, sadly, often lacks in Introductory Psychology texts. This author's position is quite appealing and it has the capacity to stimulate students' thinking rather than setting them on the track of memorising the facts.

The text is written in a very articulate yet accessible, clear and engaging style. It will encourage students to think as they read on, which should suit most learning styles except the laziest. Most research examples are excellent. While the choice of examples is favouring the 20th century Russian literature (which is to be expected), it is well balanced with the exposition of the wider world literature. What seems insufficient, though, is the referencing of the more recent research of the last decade or two. Updating these references would certainly strengthen the next incarnation of this book, especially if it ever grows into a formal textbook.

Ivannikov's parsimonious approach to illustrating the text is appealing. It makes the text look a little old-fashioned which I personally like. The text's visual design would perfectly suit a well-articulated, intrinsically motivated and text-tolerant reader. However, not all learners are like that, and some of the more visually-oriented learners may find the eye-catching features missing.

Overall, "Bases of Psychology" is a noteworthy addition to Introductory Psychology library. Its particular strength, in my opinion, is in its explicit focus on psychological THINKING, informed and inspired by the facts of the discipline, but not subdued by them. This focus is well complemented by the author's stimulating writing style, conceptual clarity and logical flow. And the author's position — ever present, witty an engaging — makes the text even more inviting for the reader.

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Review of the book by Janna M. Glozman "Developmental Neuropsychology"

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Janna Glozman's book provides a comprehensive information on both Russian and Western developmental neuropsychology. The reader, especially form the West, may find fist hand information on Vygotsky and Luria's collaboration with emphasis put on social aspects of child development. At the same time the reader can learn about principles of Luria's syndromological (qualitative) approach and Vygotsky's zone of proximal development. Two important notions that had a great impact both on the neuropsychological and developmental studies.

The first chapter "The history of developmental neuropsychology" explains the cultural-historical approach to analysis of development and abnormalities in cognitive functions. It stresses the relations between brain, genetics, sociology and personality formulation. And the statement found on page 5 that: "the influence of natural factors on child cognitive decreases with age but influence of cultural factors increases" should be borne in mind of each developmental psychologist. Luria study of 130 pairs of twins is of particular interest there. Pointing out to the possibilities of application of neuropsychology outside the clinical setting is also a valuable feature of this book.

The second chapter devoted to methodology starts with explaining basic terms what is of importance due to divers terminology used by different authors in accordance with their theoretical approach. Following types of disturbances in the development of the child are distinguished: 1. Underdevelopment, 2. Delayed development, 3. Impaired development, 4. Loss of development, 5. Deviant development, and 6. Disharmonic development. Besides, the author draws our attention to the heterochronic development of the functional (nervous) systems depending to a considerable degree upon the environmental factors. She points to the paradoxical fact that refinement of educational techniques creates greater demands form the children and may lead to appearance of special learning disabilities.

In the third chapter detailed analysis of physiological and psychological features of mental development of the child can be found. It starts with a presentation of most common neuroimaging techniques. Next dwells on plasticity of the young

brain, and often neglected development of cortical-subcortical connections, which have a significant impact upon the child mental development. Naturally, a role of language is also accentuated in accordance with Luria's approach. It is stressed that not only speech but also development of other cognitive processes is strongly influenced by environmental factors along with maturation and hierarchical complication of brain structures.

The fourth chapter is devoted to the neuropsychological assessment of children. It draws upon Luria's approach combined with Vygotsky's idea of a zone of proximal development with focus on the process and not the product itself. The delineation of basic defects underlying problems encountered by a given child provides a powerful tool of rehabilitation. The adaptation done by Glozman includes very ingenious material and takes into account limits of perception and attention of the young preschool child. Moreover, the game form is applied to ensure better cooperation of the child.

Impaired development of cognitive functions in children is discussed in chapter 5. It offers the reader a vast amount of information on such syndromes as speech disorders, dyslexia, dysgraphia, impairment of visual and spatial functions, memory, reasoning and motor disturbances, hyperactivity, attention disorders as well as learning disabilities. Those problems are discussed from neuropsychological and social point of view. Glozman points out that the application of Luria's neuropsychological approach to the assessment of children enables identification of the zone of proximal development, that is not only the weaknesses but also the strengths of a given child. And that makes possible a refinement of the course of therapy.

Chapter six deals with untypical development of the child. It is worthy to point out that not only disorders are discussed but exceptional abilities as well. They are described from neuropsychological point of view and concentrate on such illnesses as autism, stuttering, blindness and deafness (sensory deprivation), and cerebral palsy. Neuropsychological analysis of gifted children is also taken into consideration. It might be of interest that it revealed imbalance of different functional systems of such children. The most significant problems, however, are caused by their increased exhaustibility as well as emotional instability. In addition issues of bilingualism are discussed. It is stressed that acquiring a second language may facilitate the development of a healthy brain but it may cause many troubles in case of some defects. In addition, difficulties encountered by immigrant children are discussed. As in case of above presented topics not only neuropsychological aspects but also social ones are presented.

The real strength of the book under review is that it shows ways of remediating children's development. In accordance with the ideas of Vygotsky and Luria Glozman rightly points out that: "The main task of remediation is to create together with a child the means of compensation and overcoming an underdevelopment of some mental functions, using the 'strong' components of mentality to compensate the weak ones" (p. 149). Those two principles, that is child's own activity and relaying on his/her best developed abilities determine efficacy of any therapeutic procedure, and together with combining assessment with rehabilitation provide for the strength of "Russian school of rehabilitation". Each experienced therapist knows that the initial diagnosis often undergoes changes in the course of therapy.

The following principles of neuropsychological rehabilitation are enumerated:

1. Neuropsychological assessment of a given child's problems
2. Complex remediation
3. Systemic remediation — means taking into account the whole child and not disorders
4. Play activity

Another strength of Glozman's book stems from the fact that the discussed issues are illustrated with a number of samples showing the therapist at work. She is right to point out that while working with children we should make them treat the remedial exercises as a play, otherwise they will not cooperate and our efforts will prove fruitless. In addition, various games are recommended as they help to develop the child's social skills. As the author states: "…remediation is not a correction — it is a creation".

To sum up, the reviewed book gives both a deep theoretical knowledge on developmental neuropsychology and the account of practical techniques of the assessment and remediation of various difficulties encountered by children. Therefore, I would recommend it not only to neuropsychologist but to all researchers and clinicians dealing with a child development.

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