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Editorial

The current issue of "Psychology in Russia: State of the Art" provides papers on medical, social and personality psychology, as well as various works on speech, communication and semantic.

The "Medical psychology" deals with different topics which share a common idea of people's attitudes and vision of certain health-related issues. Victor A. Lazarenko with the colleagues investigated structural-phenomenological features of the internal picture of doctors' illnesses, contributing to an urgent problem of self-care in medical professionals. Natalya A. Sirota with colleagues outlined strategies and resources for coping with fear of disease progression in women with reproductive-system cancer. Larissa A. Tsvetkova, Ksenia Y. Eritsyan and Natalia A. Antonova performed a research of awareness and attitudes towards biobanks among Russian students. Finally, the article by Yury P. Zinchenko with collaborators provides insights into young people's notions about narcotics and psychoactive substances.

The "Personality psychology" section provides a collection of papers on this branch of research and its application to therapeutic practice. Sergey A. Kapustin performed conceptual analysis of an existential criterion of normal and abnormal personality in the works of Carl Jung and Carl Rogers. His article continues the series of works, published in 2015 and based on the ideas of Erich Fromm, Sigmund Freud and Alfred Adler. Oleg V. Lukyanov and Anastasiya A. Shushanikova suggest the instruments developed to study the effectiveness of psychotherapeutic processes, which were adapted on Russian-speaking samples. Evgeny N. Osin, Anna V. Malyutina and Natalia V. Kosheleva performed a pilot experimental study on how self-transcendence facilitates meaning-making and flow, according to Mihaly Csikszentmihalyi.

The "Speech and semantic" section includes various aspects of communications: from production of meanings to psychophysiological parameters. Marina O. Avanesyan and Ekaterina Yu. Khaibrakhmanova explored relationships between cognitive abilities and ability to create metaphorical names. Alexander V. Smirnov, Alyona G. Obolenskaya and Ravil A. Valiev described the semantic structure of gratitude in people with Russian, Tatar, Ukrainian and Jew origin. Nadezhda S.

Rudenko and Svetlana G. Krylova performed a pilot study of the influence of a communicator's speech characteristics on a recipient's willingness to maintain interaction in cross-cultural online communication. Alexander V. Latanov, Victor N. Anisimov and Alexander M. Chernorizov concluded that eye movement parameters while reading show cognitive processes of structural analysis of written speech.

There are only two articles in the "Social psychology" section. They provide reviews and evidence on the issues of competitiveness and status relations, topical but still emergent for Russian scholarly community. Olga A. Klyueva analyzed competitiveness of personality as a psychological phenomenon: the content of the construct and its typology. Marianna E. Sachkova and Irina N. Timoshina investigated gender aspects of the status relations in teenage student groups.

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MEDICAL PSYCHOLOGY

Structural-phenomenological features of the internal picture of doctors' illnesses

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The vocational activities of doctors and their social status do not ensure their health. And, falling ill, doctors don't identify themselves with ordinary patients as they have a deep knowledge of medicine. Thus, the internal picture of a doctor's illness is both a research and a practical problem: the problem of the psychoprevention of doctors' illnesses at all stages of their professionalization. The purpose of the research was to study the phenomenological features of the internal picture of doctors' illnesses using the structural approach. The total number of participants was 132. The experimental group consisted of 66 sick doctors, differentiated according to their stage of professionalization: vocational training (students), professional adaptation (interns), full professionalization (doctors). The control group consisted of 66 people who did not have any medical education. All the control subjects were hospitalized with chronic diseases during the study period. The organization of the research was carried out with the use of clinical-psychological and diagnostic methods, the methods of descriptive statistics, and comparative, multidimensional, and structural analysis. The research revealed the following phenomenological features of the internal picture of doctors' illnesses: the prevalence of some anxiety in the doctors and high awareness of their health; the doctors' altruistic orientation; their willingness to work despite difficulties; and their ability to achieve high results in different activities. The structural features of the doctors' image of their own diseases on the cognitive level were the following: qualitative heterogeneity during in-service activities; a high degree of image integration during in-service activities; and stereotyped perceptions of the disease. The emotional level revealed the emotional distance between doctors and their patients, and the behavioral level revealed doctors' disregard for the symptoms of the disease. The structural-phenomenological features of the formation of the internal picture of doctors' illnesses are specific to the circumstances of their origin. For the purpose of the psychoprevention of doctors' own diseases it is necessary to include these features in the special courses on medical psychology at the stages of vocational training

(students) and professional adaptation (interns), as well as in the "psychology in practical medicine" project for doctors.

The vocational activities of doctors and their social status do not ensure their health (Cui, Jeter, Yang, Montague, & Eagleman, 2007; Garelick et al., 2007; Gual, 2000; Gwen, 2005; Helliwell, 2007). Falling ill, doctors don't identify themselves with ordinary patients as they have a deep knowledge of medicine; they themselves diagnose their pathological conditions, prescribe treatments, and make prognoses for the outcome of the disease. Doctors as patients are part of the professional community, which always supports them and is loyal to them. So the problem of the internal picture of doctors' illnesses is both a research and a practical problem. A study of the problem provides an understanding of its outcome: a healthy doctor is healthy medicine! In this regard the purpose of our research was to study the phenomenological features of the internal picture of doctors' illnesses using the structural approach.

Our study and analysis of the scientific literature showed no common understanding of the concept of the internal picture of a disease; existing definitions include "consciousness of disease" (Luria, 1977), "attitude to disease" (Tkhostov, 2002, p. 287), and "personal meaning of illness" (Myasishchev, 1995). Scientific interest in the internal picture of a disease is focused mainly on studying it from the standpoint of the phenomenological somatopsychic approach (Bukharov & Golubev, 2008; Danhauer et al., 2013; Koehler et al., 2011; Nissim et al., 2013; Orlova, 2010; Shtrahova, 2008; Yozwiak, Settles, & Steffens, 2011).

Nikolaev's approach (1976, pp. 95–98) provides a theoretical and methodological foundation for the study of the internal picture of a disease. In this approach, the internal picture of a disease has four levels: (1) the level of direct sensory reflection of the disease (caused by feelings and states); (2) the emotional level (immediate emotional reactions to illness caused by feelings and emotional responses to the consequences of the disease in a person's life); (3) the intellectual level (knowledge about the disease and a rational assessment of it); (4) the motivational level (the emergence of new motifs and reorganization of the premorbid motivational structure). The personal meaning of an illness is based on the integral characteristics in the system of the internal picture of the disease, including the levels (Cui et al., 2007) and the relationship between the individual system of the internal picture of the disease (Luria, 1977, pp. 37–52) (which is positive, negative, or conflictual and is aimed at changing behavior and ways of living) and a quantitative value (Shtrahova, 2008).

The *object of the study* was the internal picture of doctors' illnesses.

The *subject of the research* was the structural and phenomenological features of the internal picture of doctors' illnesses.

The *hypothesis* of the study was that the structure of the internal picture of doctors' illnesses is characterized by complexity and high awareness of health as a value leading to a wholesome lifestyle. When a doctor becomes ill the structure of the internal picture of the illness changes stereotyped representations about the disease

at the cognitive level. In addition, distancing on an emotional level and ignoring manifestations of the disease at the behavioral level occur. The personal meaning of the doctor's own disease comes to have a conflictual character.

Method

Participants

Research was carried with the informed consent of the participants. The total number of participants was 132. The experimental group consisted of 66 sick doctors, differentiated according to the stages of their careers (Zavalishina, 2005). The first stage is vocational training (students). The second stage is professional adaptation (interns). The third stage is full professionalization (doctors). The control group consisted of 66 subjects who did not have any medical education. All the control subjects were hospitalized with chronic diseases during the study period.

We graded and distributed the subjects in the experimental and control groups according to an analysis of their medical records and clinical interviews, and we grouped them according to gender (male and female), age (21 to 55 years), and nosology of the disease, which, in equal proportions, was gastrointestinal, cardio-vascular, and endocrinological (see Table 1).

Table 1. Characteristics of the total sample of subjects ($N = 132$)

Groups		Social and demographic characteristics		Nosology of the disease		
		Sex, m/f	age, $X_{med.} \pm \sigma_x$	Gastro-enterological	Cardio-vascular	Endo-crinological
Doctors	1	12/12	22.05 ±0.91	8	8	8
	2	12/12	24.29±1.42	8	8	8
	3	9/9	44.03±10.33	6	6	6
Patients		33/33	39.80±10.15	22	22	22

Note. 1 — stage of vocational training (students), 2 — stage of professional adaptation (interns), 3 — stage full professionalization (doctors).

Instruments and measuring procedures

The research was carried out using clinical interviews and the archival method (analysis of medical records). The diagnostic instruments included: "Questionnaire related to health" (R. Berezovsky), "Repertory grid technique" (J. Kelly), "Question-naire on time perspective" (F. Zimbardo in A. Syrtsevoj's adaptation), "Timeline set-tings" (J. Nuttin), "Scale of psychological well-being" (K. Riff in T. D. Shevelenkova and P. P. Fesenko's adaptation), "Questionnaire of sociopsychological attitudes of a person in need of a motivational sphere" (O. F. Potemkinoy), "Lifeline technique" (autobiographical version) (J. F. Schoots). The statistical methods of research in-cluded quantitative and qualitative methods: descriptive statistics and comparative criteria (Mann-Whitney U test, F-distribution), multidimensional (factor analysis

by the principal component with the Kaiser varimax rotation criterion, Karpov's (1998) structural analysis). Statistical processing was carried out with the use of "Statistica 11.0" software.

Procedure

Structural-phenomenological assessment of the internal picture of a doctor's own disease was carried out at the following levels of analysis: individual elements, generalized criteria, and integral criteria. The level of individual elements combines the properties, states, qualities, and relations of the individual. The level of generalized criteria combines the set of individual, private indicators in a comprehensive index. The level of integral criteria combines the basic elements in the common space of the subjective manifestations of the internal picture of the disease, given the general emotional background (the balance of positive and negative states), health, and integrated assessment of the status of the individual.

We used comparative analysis (the Mann-Whitney U test and the *F*-distribution) for the estimation of the internal picture of the doctors' and patients' illnesses at the level of individual elements. The cognitive component consisted of awareness and competence in the field of health. The behavioral component consisted of conformity of actions and behavior to the requirements of a healthy lifestyle. The value-motivational component was characterized by the high importance of health in the individual's hierarchy of values. The emotional component, which dominated in the structure of the internal picture, was characterized by a high level of anxiety in relation to health.

Results and discussion

Sick doctors, compared with patients in the control group, were characterized by negative feelings regarding future life events with personal meaning (see Table 2). The sick doctors also had a high level of psychological well-being. We identified significantly higher values of the indicators "autonomy", "management of the environment", "personal growth", "purpose in life", and "self-acceptance". The average values of "psychological well-being" in sick doctors was significantly lower than the attitude of those in the control group, and this result testified to an insufficient level of pleasant and confident attitudes.

As can be seen in Table 2 specificity of the time perspective of the internal picture of a doctor's illness showed valid significant differences for the "negative past", "hedonistic present", "fatalistic present", and "future". For the sick doctors compared with the control-group patients past events were unpleasant and caused disgust in a greater degree. The sick doctors were focused on the satisfaction of vital needs. They were not confident in their ability to affect both present and future events.

As can also be seen in Table 2, the level of personal meaning of a doctor's internal picture was characterized by the presence of valid, significant sociopsychological factors: "result orientation", "altruism orientation", and "power (authority) orientation". The altruistic orientation in the sick doctors indicated their maturity. At the same time these people, who are ready to work very much to the detriment of themselves, need special care because of their altruism. They are usually power-

Table 2. Mean values and significant differences of the internal picture of illness (experimental and control groups) (Mann-Whitney U test, $p \leq 0.05$; $U^*_{emp.} \leq U_{kr.}$)

Indicators \ Group	Experimental (1)			Control (2)			(1)–(2)	
	$X_{med.}\pm\sigma_x$	Me	Mo	$X_{med.}\pm\sigma_x$	Me	Mo	$U^*_{emp.}$	p
Secondary signification								
1. Cognitive component	0.90±0.31	1.00	1.00	0.88±0.33	1.00	1.00	729.00	0.848
2. Emotional component	0.90±0.31	1.00	1.00	0.63±0.49	1.00	1.00	540.50*	0.010
3. Behavioral component	0.79±0.41	1.00	1.00	0.71±0.46	1.00	1.00	675.00	0.397
4. Value-motivational component	0.79±0.41	1.00	1.00	0.84±0.37	1.00	1.00	702.50	0.574
5. Past event	3.67±0.30	3.65	Multiple	3.73±0.49	3.70	Multiple	674.50	0.515
6. Present event	3.79±0.28	3.78	3.90	3.66±0.36	3.65	3.70	559.50	0.071
7. Future event	18.25±76.50	4.15	4.20	10.57±48.20	3.75	3.70	472.00*	0.007
Personal meaning of the disease								
8. Psychological well-being	52.08±6.26	60.00	62.00	58.48±3.89	50.00	50.00	321.00*	0.000
9. Autonomy	60.07±3.28	60.00	60.00	51.06±5.65	50.00	49.00	128.50*	0.000
10. Management of the environment	59.48±3.34	60.00	60.00	50.65±4.73	50.00	Multiple	101.00*	0.000
11. Personal growth	61.31±3.41	61.00	60.00	52.61±5.54	52.00	50.00	155.50*	0.000
12. Purpose inlife	59.90±3.12	60.00	60.00	52.10±4.57	51.00	50.00	141.00*	0.000
13. Self-acceptance	59.62±3.71	60.00	60.00	52.71±5.54	51.00	50.00	242.00*	0.000
14. Sphere of disease	1.86±0.69	2.00	2.00	2.50±1.00	2.50	3.00	658.00	0.037
15. Process orientation	8.21±0.98	8.00	8.00	7.98±1.54	8.00	9.00	698.50	0.674
16. Result orientation	8.66±1.11	9.00	9.00	7.25±1.60	7.00	6.00	363.50*	0.000
17. Altruism orientation	6.86±0.95	7.00	7.00	5.55±1.33	6.00	6.00	325.00*	0.000
18. Selfishness orientation	4.45±1.21	5.00	5.00	4.06±1.30	4.00	Multiple	612.50	0.192
19. Work orientation	6.69±1.07	7.00	7.00	6.61±0.94	7.00	7.00	658.50	0.390
20. Freedom orientation	8.14±0.74	8.00	8.00	7.69±1.30	8.00	8.00	592.00	0.123
21. Power orientation	6.76±1.09	7.00	7.00	6.00±1.43	6.00	Multiple	500.50*	0.013
22. Money orientation	4.55±1.15	5.00	5.00	4.82±1.66	5.00	5.00	699.00	0.678
23. Negative past	3.50±0.16	3.54	3.60	3.09±0.37	3.15	3.10	199.00*	0.000
24. Positive past	3.76±0.16	3.77	3.90	3.65±0.42	3.70	Multiple	586.50	0.191
25. Hedonistic present	3.84±0.15	3.88	3.90	3.58±0.34	3.67	3.70	371.00*	0.000
26. Fatalistic present	3.95±0.16	3.96	3.96	3.58±0.30	3.63	3.90	200.00*	0.000
27. Future	4.19±0.18	4.20	4.30	3.70±0.26	3.70	3.80	89.50*	0.000

* — Significant differences.

ful, reliable, and able to reach good results in their activities in spite of vanity, noise, and interferences.

We used the statistical *F*-distribution for estimation of the internal pictures of the sick doctors and control-group patients to get the frequency distribution of cognitive constructs ($p \leq 0.01$). The frequency of the occurrence of simple constructs was 17.53% in the sick doctors and 20.10% in the control group. The frequency of the occurrence of complex constructs was 21.30% in the sick doctors and 7.10% in the control group. The data obtained provide evidence of the cognitive complexity of personal constructs of the internal picture of a doctor's illness.

To identify the general criteria of the internal picture in the experimental and the control groups, we used the procedures of varimax rotation of the interrelationships of these variables: attitude toward the disease, meaning of the disease, mounting and the semantic component, time perspective, and Karpov's structural analysis (Karpov,1998).

The sick doctors had a five-factor structure of the internal picture of illness, in which the first factor was the system factor, with 20.4% of the total variance. This factor consisted of the following variables: "negative past" (0.765), "positive past" (0.795), "autonomy" (0.841), "personal growth" (0.816), "sphere of disease" (0.862) with the largest positive loads, and "money orientation" (-0.706) with a negative load. We interpreted the total factor as "negative past and disease, isolation in interpersonal attitudes, domination, independence, aspiration to self-realization".

The following four generalized variables of the internal picture of the doctors' illnesses can be characterized by four generalized parameters: "time perspective" (14.9%), "high awareness in sphere of own health and altruistic values" (14.0%), "money orientation" (13.0%), "optimum uneasiness concerning own health and negative past" (10.1%). The revealed factors explain 72.4 % of the total variance.

Figure 1. Factorial loadings after varimax rotation of the variables of the experimental group's internal pictures (secondary factorization); maximal factorial loadings > 0.7

The procedure of secondary factorization of the variables of the internal picture of the doctors' illnesses revealed the following integrative characteristics (see Figure 1): "negative past and disease, isolation in interpersonal attitudes, domination, independence, aspiration to self-realization" (27.3%), "time perspective" (20.9%),

"high awareness of own health and altruistic values" (17.4%), "optimal anxiety concerning own health" (10.4%). The identified factors determined 76.0% of the total variance.

We called *the first factor* "negative past and disease, isolation in interpersonal relationships, domination, independence, desire for self-realization". Thus, the sick doctors perceived the events of the past as unpleasant and were focused on obtaining life's pleasures. They had a limited number of relationships with other people and had difficulty expressing openness, warmth, and concern for others. They experienced frustration in the establishment of interpersonal relationships and showed unwillingness to comprise. They manifested themselves as autonomic and independent, ready to control their behavior, and they evaluated themselves according to their personal criteria. They perceived themselves as "growing" and self-realizing people, open to new experience, and having the desire and ability to realize their own potential. They did not differentiate negative life events and diseases.

We called *the second factor* "time perspective"; it expressed the degree of acceptance of one's own past, in which every experience was regarded as contributing to development.

We called *the third factor* "high awareness of own health and altruistic values"; this factor reflected the degree of awareness of one's own health and one's competence in dealing with it.

We called *the fourth factor* "optimal anxiety concerning own health"; this factor was characterized as the ability to enjoy one's own health and to be pleased with it.

The next stage of the research was the factor analysis of the internal-picture structure in the control group. Five integrative indicators were identified: "psychological well-being" (19.9%), "time perspective" (16.1%), "altruism, freedom, work" (14.1%), "negative past" (9.8%), "high importance of health in the individual hierarchy of values" (7.0%). These factors explained 66.9% of the total variance.

The following integral components of the internal-picture structure in the control group explained 79.8% of the total variance: "psychological well-being" (31.5%), "time perspective" (24.5%), "egoism, authority, money" (14.7%), and "positive past" (9.1%) (see Figure 2).

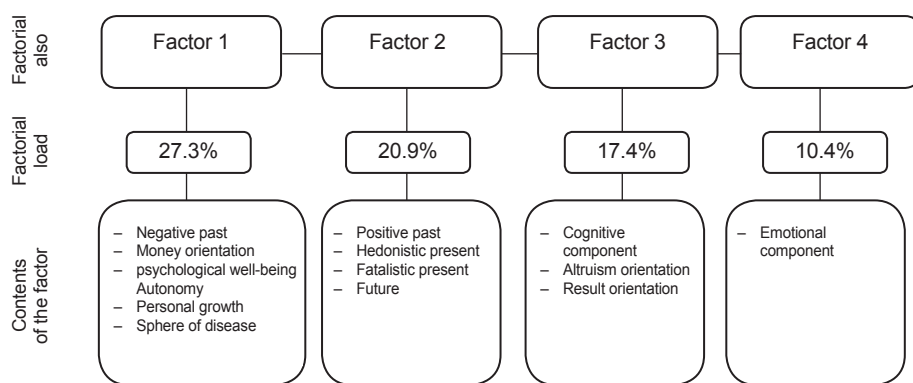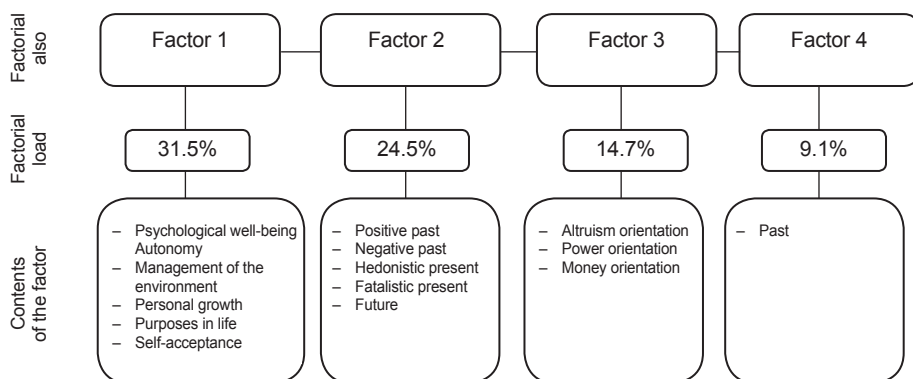**Figure 2.** Factorial loadings after varimax rotation of the variables of the control group's internal pictures (secondary factorization); maximal factorial loadings > 0.7

We called *the first factor* "psychological well-being" (31.5%). It was characterized as having satisfactory, confidant relationships with others, along with empathy, affection, and intimacy. It also meant understanding that human relationships are built on mutual concessions, autonomy, independence, self-regulation of one's own behavior, and self-assessment according to one's own criteria. This factor revealed an orientation to power and competence in managing the environment. It also was characterized by openness to new experiences as well as by having a sense of potential realization, a goal in life and sense of self-direction, a positive attitude toward oneself, and knowledge and acceptance of various opinions, including positive and negative assessments of past events.

We called *the second factor* "time perspective" (24.5%); this factor represented an adequate and realistic perception of one's own disease, including the recognition of one's past experience. The indicators "hedonistic and fatalistic present" and "orientation to the future" were significantly lower in the control group than in the experimental group.

The third factor—"egoism, authority, money" (14.7%)—characterized a certain degree of "rational egoism" and the presence of orientations toward power and money.

The fourth factor, "positive past" (9.1%), reflected a positive mental attitude toward past events. This factor indicated the high importance of health in an individual's hierarchy of values and the motivation to maintain and improve health.

Study of the structural organization of the internal picture of doctors' illnesses according to the criteria of professional stages was performed using Karpov's structural analysis (Karpov, 1998) and a system of structural indices: index of coherent structures (ICS), index of divergent structures (IDS), and overall organizational structure (ITS).

The ICS was determined to be a function of positive significant relationships in the structure and measures of significance. The IDS was determined to be a function of the number and significance of negative communications in the structure. The IOS was defined as the difference in "weights" of positive and negative communications. These communications, significant at 0.99 and 0.95, were taken into account in the study.

Table 3. The integration measure of the structure of the internal picture of diseases in the experimental and the control groups

Group Integration measure of the internal picture of an illness	Experimental Professionalism stages			Control
	1	**2**	**3**	
ICS	36	64	98	108
IDS	18	40	6	8
IOS	18	24	92	100

Note. 1 — stage of vocational training (students), 2 — stage of professional adaptation (interns), 3 — stage of full professionalization (doctors); ICS — index of coherent structures; IDS — index of divergent structures; IOS — index of overall organizational structure.

The structural organization of the internal picture of doctors' illnesses was determined differentially according to the criteria of professional stages—vocational training, professional adaptation, and full professionalization. The highest integration measure of the structure of the internal picture of doctors' illnesses was identified at the final professional stage, doctor (IOS = 92) (see Table 3).

Study of the homogeneity and the heterogeneity of the internal-picture structure of doctors' illnesses at various stages of professionalization was carried out using the method χ^2. The results testified to the qualitative heterogeneity of the structure because of the absence of statistical significance in the correlations between the ranks of the structures at various stages of professionalization: at vocational training–professional adaptation: $R = 0.87$ at $p = 0.33$; at professional adaptation–full professionalization: $R = 0.50$ at $p = 0.67$. However, the structure of the internal picture of illness in the experimental and the control groups was homogeneous because of the presence of statistical significance in the correlations between the ranks of the structures: $R = 1.00$.

Thus, the high integrity and uniformity of the structure of the internal picture of doctors' illnesses compared with the structure in patients (without the cognitive and emotional components) indicates stereotyping of perception and the conflictual nature of its personal meaning of the disease, which appeared at the behavioral level when doctors ignored symptoms of their disease.

Conclusion

The following structural and phenomenological features of the internal picture of doctors' illnesses were identified in the study: the prevalence of some anxiety in the doctors and high awareness of their health, along with their altruistic orientation, willingness to work despite difficulties, and ability to achieve high results in different activities. The structural features of the doctors' image of their own illnesses on the cognitive level were the following: qualitative heterogeneity during in-service activities, a high degree of structural integration of the image during in-service activities, and stereotyped perceptions of the disease. The emotional level revealed the emotional distance between a doctors and their patients, and the behavioral level revealed their ignoring symptoms of the disease. For the purpose of the psychoprevention of diseases, the structural-phenomenological features of the formation of the internal picture of a doctor's illness as specific to the circumstances of its origin should be included in the special courses on medical psychology at the stages of vocational training (students) and professional adaptation (interns), as well as in the "psychology in practical medicine" project for doctors.

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Strategies and resources for coping with fear of disease progression in women with reproductive-system cancer

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Fear of disease progression is one of the most common sources of psychological distress in patients suffering from chronic diseases. Fear of disease progression is a situation-specific and fully discernible (reportable) emotion based on personal experience of a life-threatening disease. This article presents the results of a study of cancer patients' coping behavior according to the levels of fear of disease progression experienced. The presence of pronounced fear of disease progression reflects a negative cognitive-affective response to one's expectations for one's own future; this response is related to a decrease in adaptive capacity. To determine the particular characteristics of coping strategies and coping resources in women with reproductive-system cancers according to the level of fear of disease progression. A total of 177 women with reproductive-system cancers were examined, among them 59 with breast cancer and 118 with gynecological cancers. Women with reproductive-system cancers have varying sets of coping strategies and coping resources according to their level of fear of disease progression. For each of the differentiated groups, specific characteristics of the strategies of coping with difficult life situations are described, along with cognitive self-regulation strategies specific to the illness and to coping resources. The women exhibiting moderate fear of disease progression significantly more often adhered to problem-oriented strategies of coping with difficult life situations and illness and had an internal locus of control regarding treatment. Patients with a low level of fear of disease progression tended to use strategies of positive reinterpretation of difficult life situations and illness; an external locus of control regarding treatment prevailed in this group. Patients found to have a dysfunctional level of fear of disease progression displayed significantly higher rates of using cognitive-regulation strategies focused on negative aspects of illness, as well as strategies for avoiding difficult life situations. Fear of disease progression is a psychological problem in women with

reproductive-system cancers. Higher levels of fear of disease progression are associated with a decrease in the psychosocial adaptation of women suffering from reproductive-system cancers.

Keywords: female reproductive-system cancers, fear of disease progression, cognitive strategies for self-regulation in illness, locus of control in illness, self-efficacy in illness and treatment

Introduction

Fear of disease progression is among the most common psychological issues in patients with chronic illness. Research among patients with rheumatoid arthritis, cancer, and diabetes has shown that fear of disease progression is one of the key causes of psychological distress (Dankert, Duran, & Engst-Hastreiter, 2003). The similarity of emotional experience concerning the inferred biological, psychological, and social consequences of the disease has allowed fear of disease progression to be differentiated as a general concept reflecting future-oriented apprehensiveness in the sick (Herschbach, Berg, Book, & Dinkel, 2011). Researchers interpret fear of disease progression as a cognitive-affective response based on personal experience of a life-threatening illness. Previous research has differentiated two levels of fear of disease progression: the mobilizing and the dysfunctional levels. The mobilizing level is defined as a reasonable response to a real threat over the period of disease diagnostics and treatment and suggests an increase in treatment adherence, resource activation, and use of more effective coping strategies. The dysfunctional subtype of fear of disease progression is, in turn, associated with psychological distress, a decrease in quality of life, and an intense cognitive-affective reaction to disease (Herschbach et al., 2010). The prevalence of the dysfunctional subtype in women with reproductive-system cancers, according to some authors, reaches up to 47%, a proportion that makes its assessment especially relevant for this group of patients (Myers et al., 2013).

Malignant tumors of the female reproductive system are an important medical, social, economic, clinical, and psychological issue: they are associated with high mortality rates because of cancer progression (Chissov, Starinskiy, & Petrova, 2012). Psychological problems associated with the process of treatment are of great concern too. Among the modern methods of female reproductive-system cancer treatment, surgery and other invasive approaches are still prevalent, although they cannot guarantee total recovery, have side effects, and can lead to functional impairment, which, in turn, increases apprehension about the disease, the treatment procedures, and the chances for disease progression (Marilova, 1984). The prevalence of psychological distress in women diagnosed with breast cancer is associated also with the presence of a visible blemish, the threat to life, the crippling character of the treatment, and the fear of losing one's femininity (Sharova, 2001). In addition, studies of emotional distress in patients undergoing chemotherapy have indicated increased levels of anxiety and depression connected with medication use (Sabbioni, Bovbjerg, Jacobsen, Manne, & Redd, 1992). A reduction in adaptive capacity in patients undergoing chemotherapy is associated with the high toxicity of this type of treatment.

There is some controversy regarding studies of coping behavior. Researchers point out that such coping styles as helplessness and hopelessness are associated

with the more severe courses of breast cancer (Morris, Pettingale, & Haybittle, 1992). At the same time, the maintenance of problem-oriented behavior modes in women at advanced stages of cancer favors a decrease in symptoms of anxiety and depression and contributes to their "fighting spirit" (Hislop, Waxler, Coldman, Elwood, & Kan, 1987). Many researchers share the opinion that coping processes are influenced mainly by emotionally tinged subjective theories of disease (Taylor, Lichtman, & Wood, 1984).

Modern research in the field of clinical psychology has proved that the symptoms of post-traumatic stress disorder predominantly include those featuring "intrusive thoughts," both as memories of surgical and conservative treatment and as fear of possible disease progression in the future (Tarabrina, Vorona, Kurchakova, Padun, & Shatalova, 2010), as well as affective disorders of various types and severity in women with reproductive-system cancer (Monasypova, 2012).

As a rule, in cases of illness, customary inferences of the integrity and firmness of one's self are prone to alteration, one's customary system of senses and values is destabilized, and one's behavior changes as well (Nikolayeva, 1987; Tkhostov, 2002). Because fear of disease progression reflects patients' inferences about the possible future consequences of their illness, measures to control anxiety via the activation of strategies and behavioral resources gain in importance.

Method

Study design

Our research objective was to study the coping behavior of women with reproductive-system cancer with respect to the level of fear of disease progression. Based on this objective, a special set of research materials was established:

To evaluate the severity of fear of disease progression, we used the Short Form of the Fear of Progression Questionnaire by Mehnert, Berg, Henrich, and Herschbach (2009), Russian-language version by Sirota and Moskovchenko (2014).

To study the processes of cognitive-stressor assessment and the processes of coping with the disease, we used the Illness Cognition Questionnaire by Evers et al. (2002), Russian-language version by Sirota and Moskovchenko (2014).

To study the strategies of coping with difficult life situations, we used the questionnaire Assessing Coping Strategies by Carver, Scheier, and Weintraub (1989), Russian-language version by Rasskazova, Gordeeva, and Osin (2013).

The study of locus of control was carried out using the Locus of Disease Control Questionnaire, by Bevz (1998). This technique helps determine the patient's position regarding his/her somatic illness within a range from active (internal) to passive (external). The questionnaire includes 18 statements, each with 6 possible answers. According to the instructions, the options are: 0 – totally disagree, 1 – disagree, 2 – somewhat disagree, 3 – somewhat agree, 4 – agree, 5 – fully agree.

To study the connection between perceived apprehension about disease progression and perceptions of the amount of support provided by patients' families and friends, we used the Multidimensional Scale of Perceived Social Support Questionnaire by Zimet (1988), as adapted by Sirota and Yaltonsky (1994).

The confidence of the research subjects in their abilities and capacities to cope with illness and to adhere to medical advice was studied using the Questionnaire of Self-Efficacy in Illness and Treatment, a means suggested by Tkhostov (2002) and Rasskazova (2010). In this model, self-efficacy means confidence in one's ability to reach set goals. The scale includes eight items and is designed to measure confidence in having the capabilities and opportunities to overcome a disease, to adhere to medical recommendations, and to be cured.

Sample

Study subjects included 177 women with reproductive-system cancer, mean age 54.66±6.86. All examined patients had been admitted to the in-patient unit at the N. A. Semashko Central Clinical Hospital #2 of JSC Russian Railway in Moscow. Among the examined patients, 59 had breast cancer; 21 of them were early-stage patients, and 38 were advanced-stage patients. Other study subjects included 59 who were suffering from uterine cancer; of these 42 were early-stage patients and 17 were advanced-stage patients. The third group included 59 women with ovarian cancer; among them 24 were early-stage and 35 were advanced-stage patients.

Table 1. Clinical data on patients with a mild level of fear of disease progression (group A), a moderate level of fear of disease progression (group B), and a severe level of fear of disease progression (group C).

Variable	Mild fear of disease progression Group A	Moderate fear of disease progression Group B	Severe fear of disease progression Group C
Allocation results for levels of fear of disease progression	78	60	39
Level of fear of disease progression	20.66±4.26	32.56±3.67	46.02±5.17
Diagnosis	Ovarian cancer – 30.9% Uterine cancer – 33.3% Breast cancer – 35.8%	Ovarian cancer – 40% Uterine cancer – 46.66% Breast cancer – 13.3%	Ovarian cancer – 35.8% Uterine cancer – 12.8% Breast cancer – 51.2%
Disease stage	I, II – 54% III, IV – 46%	I, II – 55% III, IV – 45%	I, II – 30.7% III, IV – 69.4%
Type of treatment	Chemotherapy – 46.6% Surgery – 53.3%	Chemotherapy – 46.6% Surgery – 53.3%	Chemotherapy – 76.9% Surgery – 24%
Progression according to RECIST 1.1 criteria	21%	26%	35%

All study subjects were divided into three groups according to their exhibited level of fear of disease progression. To operationalize such a division, we used the Short Form of the Fear of Progression Questionnaire. Table 1 shows the clinical features of the sample with a description of the levels of fear of disease progression.

As can be seen in Table 1, the majority of patients demonstrating severe fear of disease progression had been diagnosed with breast cancer and ovarian cancer, while women diagnosed with uterine cancer demonstrated less apprehension about the likelihood of cancer recurrence in the future. The majority of patients with severe fear of disease progression were those assessed at the advanced stage of cancer and those undergoing chemotherapy. In group C, the highest rate of cancer progression, according to RECIST 1.1 criteria, was registered.

Table 2 presents sociodemographic data for the study subjects.

Table 2. Sociodemographic data on patients with a mild level of fear of disease progression (group A), a moderate level of fear of disease progression (group B), and a severe level of fear of disease progression (group C).

Variable	Mild fear of disease progression Group A	Moderate fear of disease progression Group B	Severe fear of disease progression Group C
Age, years (M±SD)	53.02±7.57	55.38±6.81	54.06±6.45
Education	University graduates – 26.6% College graduates – 60.1% High school graduates – 13.3%	University graduates – 26.6% College graduates – 56.6% High school graduates – 13.3%	University graduates – 46.1% College graduates – 38.46% High school graduates – 12.8%
Marital status	Married – 82% Divorced – 10.1% Widowed – 8.8%	Married – 72% Divorced – 13.3% Widowed – 15%	Married – 64.1% Divorced – 25.6% Widowed – 10.3%
Work status	Continued to work at examination – 33.3%	Continued to work at examination – 28.3%	Continued to work at examination – 46.1%

Note. M – mean value; SD – standard deviation

Results

The study of coping strategies showed significant differences among the groups of women with varying levels of fear of disease progression. Data summarizing the results of our study of coping strategies are presented in Table 3.

The women with a pronounced fear of disease progression significantly more often resorted to coping strategies such as "focus on and venting of emotions" (11.76±2.20), "mental disengagement" (9.79± 2.60), and "behavioral disengagement" (10.71±3.11). Notably, the patients with a dysfunctional fear of disease progression significantly more rarely adopted coping strategies such as "positive reinterpretation and growth" (8.61±2.48), "use of instrumental social support" (9.64±2.75), and "active coping»" (8.97±2.45).

Table 3. Coping strategies according to COPE Questionnaire in patients with a mild level of fear of disease progression (group A), a moderate level of fear of disease progression (group B), and a severe level of fear of disease progression (group C).

Coping strategies	Group A	Group B	Group C	Significance of differences, Mann-Whitney U-Criterion		
	M (SD)	M (SD)	M (SD)	P_{a-b}	P_{a-c}	P_{b-c}
Positive reinterpretation and growth	11.05 (2.45)	9.78 (2.40)	8.61 (2.48)	0.05	0.04	–
Mental disengagement	7.37 (2.74)	6.60 (2.47)	9.79 (2.60)	–	0.03	0.02
Focus on and venting of emotions	9.35 (2.75)	10.36 (3.33)	11.76 (2.20)	–	0.05	0.03
Use of instrumental social support	11.06 (2.08)	12.30 (2.72)	9.64 (2.75)	–	0.05	0.05
Active coping	10.95 (2.15)	11.91 (3.06)	8.97 (2.45)	–	0.04	0.05
Denial	9.23 (2.02)	8.41 (2.58)	8.38 (2.26)	–	–	–
Religious coping	12.79 (1.76)	11.81 (1.69)	12.61 (1.71)	–	–	–
Humor	7.56 (2.16)	7.06 (1.61)	6.97 (1.82)	–	–	–
Behavioral disengagement	7.56 (1.82)	7.15 (2.95)	10.71 (3.11)	–	0.04	0.04
Restraint	6.87 (1.78)	6.85 (1.70)	7.28 (2.11)	–	–	–
Use of emotional social support	12.83 (1.54)	12.55 (1.68)	12.35 (1.61)	–	–	–
Substance use	5.64 (1.55)	5.83 (1.49)	6.15 (1.88)	–	–	–
Acceptance	12.83 (2.39)	11.96 (2.46)	10.84 (2.70)	–	0.04	–
Suppression of competing activities	10.31 (2.03)	11.28 (2.53)	9.89 (1.80)	–	–	–
Planning	10.53 (1.84)	11.32 (2.53)	10.38 (2.28)	–	–	–

Note. M – mean value; SD – standard deviation

The women with a moderate level of disease progression showed a significant trend toward using such strategies as "active coping" (11.91±3.06) and "use of instrumental social support" (12.30±2.72). Least represented in this group were strategies aimed at avoiding difficult life situations. Of note, the patients with a low level of fear of disease progression, as compared with the other patients, were

significantly more likely to turn to the coping strategy "positive reinterpretation and growth" (11.05±2.45).

Special attention should be paid to the results of the study of the process of cognitive-disease assessment and means to overcome its negative consequences. Table 4 shows the results from the Illness Cognition Questionnaire.

Table 4. Results of the Illness Cognition Questionnaire in patients with a mild level of fear of disease progression (group A), a moderate level of fear of disease progression (group B), and a severe level of fear of disease progression (group C).

Cognitive assessment processes and means to overcome the negative consequences of illness	Group A	Group B	Group C	Significance of differences, Mann-Whitney U-Criterion		
	M (SD)	M (SD)	M (SD)	P $_{a-b}$	P $_{a-c}$	P $_{b-c}$
Cognitive strategies mediating the negative meaning of the stressful event	18.54 (3.12)	16.33 (5.03)	12.53 (4.10)	–	0.05	0.04
Cognitive strategies reflecting the positive reinterpretation of the illness situation	15.46 (4.20)	12.80 (4.59)	10.48 (2.99)	0.04	0.001	0.03
Cognitive strategies highlighting the negative meaning of the disease	9.33 (2.80)	12.16 (4.26)	16.30 (4.19)	–	0.05	0.05

Note. M – mean value; SD – standard deviation

Table 5. Results gained from the Locus of Disease Control Questionnaire in patients with a mild level of fear of disease progression (group A), a moderate level of fear of disease progression (group B), and a severe level of fear of disease progression (group C).

Locus of control in disease	Group A	Group B	Group C	Significance of differences, Mann-Whitney U-Criterion		
	M (SD)	M (SD)	M (SD)	P $_{a-b}$	P $_{a-c}$	P $_{b-c}$
Fatalistic	10.91 (2.26)	11.61 (1.08)	14.02 (2.69)		0.04	0.05
Medical	14.74 (1.66)	13.81 (2.42)	12.87 (2.71)	–	–	–
Independent	10.53 (1.96)	14.20 (2.48)	10.32 (2.20)	0.03	–	0.03
Self-condemning	10.39 (2.07)	11.01 (2.60)	12.87 (2.23)	–	–	–

Note. M – mean value; SD – standard deviation

The women with a pronounced fear of disease progression significantly more often used cognitive strategies highlighting the negative meaning of the disease (16.30±4.19). In the women with a moderate fear of disease progression, the leading coping strategy of self-regulation regarding the disease was that encompassing cognitive strategies mediating the negative meaning of the stressful event (16.33±5.03). The women with a low level of fear of disease progression also resorted to cognitive strategies reflecting the positive reinterpretation of the illness situation (15.46±4.20).

Regarding the locus of control, statistically significant differences among the three groups were demonstrated as well. Data obtained are presented in Table 5.

The prevailing type of locus of control for the women with a pronounced fear of disease progression was the fatalistic one (14.02±2.69). In the women with a moderate fear of disease progression, the independent locus of control predominated. (14.20±2.48). Women with a low fear of disease progression were characterized by the prevalence of the medical locus of control (14.74±1.66).

The results of the study of self-efficacy in illness and treatment are presented in Table 6.

Table 6. Results gained with the Self-Efficacy in Illness and Treatment Questionnaire in patients with a mild level of fear of disease progression (group A), a moderate level of fear of disease progression (group B), and a severe level of fear of disease progression (group C).

Assessment criteria	Group A	Group B	Group C	Significance of differences, Mann-Whitney U-Criterion		
	M (SD)	M (SD)	M (SD)	P_{a-b}	P_{a-c}	P_{b-c}
Level of self-efficacy in illness and treatment	40.44 (9.42)	37.36 (6.51)	36.89 (8.03)	0.04	0.03	–

Note. M – mean value; SD – standard deviation

Regardless of the level of fear of disease progression, all patients demonstrated a moderate level of self-efficacy. However, the females with a high level of fear of disease progression displayed less confidence and less ability to overcome the consequences of disease and treatment (36.89±8.03). The highest level of self-efficacy was registered in the women with a low level of fear of disease progression (40.44±9.42).

The study of the level of perceived social support demonstrated that the presence or absence of perceived apprehension about disease progression had no effect on the perception of the amount of support provided by patients' families, friends, and significant others. The results obtained are shown in Table 7. In patients demonstrating mild or no fear of disease progression, a higher level of perceived social support from significant others was registered; however, no relevant variations in these terms were indicated between the groups.

In the current study, we designated the strategies of coping with difficult life situations, cognitive self-regulation techniques in illness, and coping resources (lo-

Table 7. Results gained from the Multidimensional Scale of Perceived Social Support in patients with a mild level of fear of disease progression (group A), a moderate level of fear of disease progression (group B), and a severe level of fear of disease progression (group C).

Perceived social support	Group A	Group B	Group C	Significance of differences, Mann-Whitney U-Criterion		
	M (SD)	M (SD)	M (SD)	$P_{a\text{-}b}$	$P_{a\text{-}c}$	$P_{b\text{-}c}$
Family	3.56 (1.59)	3.66 (0.50)	3.61 (0.49)	–	–	–
Friends	2.33 (1.47)	2.35 (1.48)	2.38 (1.67)	–	–	–
Significant others	3.81 (1.63)	2.79 (1.71)	2.84 (1.51)	–	–	–

Note. M – mean value; SD – standard deviation

cus of control in illness, self-efficacy in illness) as predictors of the efficacy of overcoming fear of disease progression. To test the hypothesis, we applied a multiple linear regression with a stepwise integration of variables in the regression model. The results of this regression analysis of the strategies of coping with difficult life situations and of cognitive self-regulation techniques are presented in Table 8.

Table 8. Regression analysis of coping strategies and of fear of disease progression in women with reproductive-system cancer.

	Fear of disease progression	R^2	F	p
Positive reinterpretation and growth	$\beta = -0.18$	0.34	12.72	0.001
Active coping	$\beta = -0.21$			
Cognitive strategies mediating the negative meaning of illness	$\beta = -0.16$			
Cognitive strategies reflecting the positive reinterpretation of illness	$\beta = -0.25$	0.44	46.07	0.001
Cognitive strategies highlighting the negative meaning of illness	$\beta = 0.39$			

As can be seen from the table, the choice of cognitive strategies highlighting the negative meaning of illness was likely to augment fear of disease progression, while choosing strategies downgrading the negative meaning of the event and strategies reflecting the positive reinterpretation of the illness situation tended to diminish the degree of fear of disease progression. Such strategies of coping with difficult life situations as "positive reinterpretation and growth," as well as "active coping," also contributed to the modulation of fear of disease progression.

The results of the regression analysis of coping resources are summarized in Table 9.

Table 9. Regression analysis of coping resources and of fear of disease progression in women with reproductive-system cancer.

	Fear of disease progression	R^2	F	p
Fatalistic locus of control	β = 0.20			
Medical locus of control	β = −0.14	0.33	21.58	0.001
Independent locus of control	β = −0.31			
Self-efficacy in illness and treatment	β = −0.24			

The fatalistic locus of control with regard to the causes of illness had an impact on the degree of fear of disease progression. Such control options as medical control and self-control contributed to the modulation of fear of disease progression. Self-efficacy in disease and treatment also contributed to the modulation of fear of disease progression.

Discussion

Future-oriented fear of disease progression is one of the major causes of psychological distress in women with reproductive-system cancer. According to international data, a high level of anxiety about possible disease progression is reported in 9% to 34% of patients, mostly in women diagnosed with cancer, particularly breast cancer (Deimling, Wagner, & Bowman, 2006).

In our study, the women with the dysfunctional type of fear of disease progression were significantly more likely to resort to strategies directed at problem avoidance. These patients used various types of activities to distract themselves from unpleasant thoughts associated with the problem, but at the same time they were more likely to give up on treatment aims and to decrease their efforts to interact with the stressor. In addition, patients in this group showed a significantly higher tendency to focus on negative emotions and to continuously turn the affective aspects of the negative events over in their minds. They were also likely to resort to such means of self-regulation as self-accusation and accusation of others. The results obtained are consistent with those reported in a number of studies of fear of disease progression (Koch, Jansen, Brenner, & Arndt, 2013). The avoidance of stressful life situations by patients with a high level of disease progression could be accounted for by the narrowing of their motivational sphere: with health and life preservation seen as the key target, all other motives are comprehended as subordinate to it; this perception leads to the narrowing of patients' interests and the generation of self-limiting behavior (Sokolova & Nikolaeva, 1995).

Behavior during illness varied among the differentiated groups. Patients with the dysfunctional type of fear of disease progression were more likely to resort to cognitive strategies, thereby highlighting the negative meaning of the disease; this path led to their focusing mainly on the negative aspects of the illness as an uncontrollable, unpredictable, and immutable condition that consists in experiencing helplessness and hopelessness. This association between the helplessness-hopelessness construct and a decrease in psychological and physical well-being in various

chronic diseases has been shown in several international studies (DeVellis & Blalock, 1992; Everson et al., 1996). Patients demonstrating moderate fear of disease progression tend to use cognitive strategies aimed at decreasing the negative meaning of the stressful event. The use of this kind of a psychological self-regulation strategy involves the acceptance of the need to adapt to chronic disease and the capacity to withstand the unpredictable, uncontrollable character of the illness and to overcome its aversive meaning. The positive impact of the inferences associated with the acceptance of illness consists in processing stress-associated information on the cognitive level; such processing facilitates the activation of problem-solving behavior (Li & Moore, 1998). In our study, cognitive strategies reflecting the positive reinterpretation of the illness situation were more common in the group with a mild level of fear. Such techniques of cognitive regulation in a situation of uncontrollable stress are based in a change in life priorities and personal aims, with patients pointing out positive changes in their personality and interpersonal relationships.

The women with the dysfunctional type of fear of disease progression were significantly more likely to associate disease onset with hereditary factors and destiny, and they were convinced of their own inability to exert a sufficient impact on the course of treatment. The women with a moderate fear of disease progression were oriented toward active participation in the course of treatment and independent coping with the disease. Patients with a mild or no fear of disease progression were more oriented on medical aid, which includes delegating the responsibility for their course of treatment to medical personnel.

A number of studies have used the concepts of locus of control in relation to the causes of disease and locus of control in relation to treatment (Tashlykov, 1984). Based on the results shown in Table 5, dysfunctional patients with fear of disease progression have an external (fatalistic) locus of control regarding the causes of the disease and the treatment. Patients with a moderate or mild fear of disease progression have a mixed locus of control regarding the causes of the disease; such a locus indicates ambivalence, with judgment determined mainly by a particular situation. Table 10 shows possible variations in the locus of control depending on the degree of fear of disease progression.

Table 10. Possible variations in the locus of control in patients with a mild level of fear of disease progression (group A), a moderate level of fear of disease progression (group B), and a severe level of fear of disease progression (group C).

Locus of control variations	No fear of disease progression Group A	Constructive (i.e., functional) fear of disease progression Group B	Dysfunctional fear of disease progression Group C
Locus of control regarding treatment	External control	Internal control	External control
Locus of control regarding the causes of illness	Mixed control	Mixed control	External control

A number of international researchers have pointed out that an internal locus of control regarding treatment is associated with the adaptational coping style "fighting spirit" in patients suffering from breast cancer and causes a decrease in the level of anxiety and depression (Watson, Greer, & Rowden, 1991). Thus, a moderate level of fear helps patients adhere to problem-oriented modes of behavior.

In our study, patients with moderate and severe fear of disease progression had a moderate level of self-efficacy in illness and treatment, whereas patients with no or mild fear felt more confident about their capacity to overcome the disease and follow all medical advice. A higher level of self-efficacy in the group of patients showing no fear of disease progression might reflect the tendency to underestimate the severity of the illness, while the tendency to demonstrate a lower level of self-efficacy in the women with moderate and severe fear of disease progression might have various causes. The patients with the dysfunctional type of fear were less likely to believe in their ability to overcome the disease and to adhere to medical advice because of their overestimation of the possible consequences of the illness; this overestimation reflected their hypernosologic reactions. At the same time, in those with a moderate fear of disease progression, their lower level of self-efficacy was due to their rational health assessment and the real possibility of future disease recurrence.

Regarding apprehension about possible disease progression in the future, the results obtained could be interpreted as the search for a functional means for preventing possible recurrence by finding solutions to everyday problems and relying on one's own resources; such a means is relevant for patients with a moderate fear of disease progression. Patients demonstrating no or mild fear of disease progression tended to overcome their perceived apprehension by concentrating on the positive consequences of the illness situation and, in turn, on positive changes in their personality. Patients with the dysfunctional type of fear were inclined to use feelings of hopelessness and helplessness as a means of self-regulating their condition; this course of action can be interpreted as a reflection of the patients' apprehension about their loss of autonomy, intense emotional reactions to treatment, and fears concerning the future of their family.

Conclusion

Fear of disease progression is in general an adequate response to a real threat in the course of disease diagnostics and treatment; such apprehension may vary in severity from functional (i.e., mobilizing) to dysfunctional. Exaggerated fear about the likelihood of disease progression, with all the biological, psychological, and social consequences it entails, reduces the patient's adaptive capacity, thereby contributing to the avoidance of certain types of coping strategies in order to minimize the apprehension associated with the illness.

It is important to determine psychotherapeutic targets for patients with the dysfunctional type of fear of disease progression. According to the results of the study, the following psychotherapeutic targets can be established:

- Overcoming the restrictive model of illness by increasing acceptance of illness.

- Cognitive restructuring of inferences about the randomness of disease out-comes, with the occurrence of the disease attributed to hereditary factors or destiny and perceived as independent of the patient.
- Generating an internal locus of control regarding treatment.
- Increasing self-efficacy in disease and treatment.

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Russian students' awareness of and attitudes toward donating to biobanks

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Today in Russia and all over the world significant efforts are invested in building biobanks—specialized facilities for storing biological materials for research and medical purposes. The successful functioning of biobanks depends directly on people's willingness to donate their biological materials. No previous studies of people's attitudes toward donations to biobanks have been undertaken in Russia. The goal of this study was to measure attitudes toward biobank donation among young Russians and to evaluate potential sociodemographic and personality factors that play a role in a person's readiness to become a donor. Data from 542 students at Saint Petersburg State University were collected from group-administered paper-and-pencil questionnaires. Only one-fifth of the students knew about the existence of biobanks, while roughly the same number believed they might have heard something about them but were not absolutely certain. However, the students indicated a relatively high level of readiness to become biobank donors (74%). Willingness to be a biobank donor was correlated significantly with studying biology and was just modestly correlated with students' values. In addition, we found gender-specific differences in the biobank characteristics that students felt were important in making a decision about whether to donate. The study demonstrated that today the attitudes of the general population (at least, those of the subgroup studied, students) do not pose a problem for the further development of biobanking in Russia.

Keywords: biobank, public attitude, public opinion, awareness, Rokeach Values Survey, university students, cross-sectional

Introduction

A biobank is a specialized facility that stores for research and medical purposes both biological materials (such as samples of blood, saliva, urine, DNA, and bone marrow) and relevant information about the donors of these materials (physical, behavioral, and sociopsychological characteristics). Biobanks are an important public health resource because of their relevance for carrying out medical and biological research, for solving problems of forensic medicine, and for developing

new methods of diagnostics and treatment, as well as for reaching other goals (O'Doherty & Hawkins, 2010; Riegman et al., 2008; Serepkaite, Valuckiene, & Gefenas, 2014; Sudlow et al., 2015; Thompson & Willeit, 2015).

The successful functioning of biobanks depends directly on people's willingness to donate their biological materials for purposes of research and storage. Therefore, the availability of voluntary donors is the cornerstone of any biobanking system (Gaskell & Gottweis, 2011). In fact, every country that has tried to establish such a system has evaluated the extent to which different groups among the general population were ready to make such a donation as well as the key factors people consider when deciding to become a donor.

Russia has made several attempts to establish specialized biobanks (Buikin, 2012), and there is sufficient reason to believe that these practices will continue. However, so far no attempts have been made in Russia to study people's attitudes toward this particular type of biological donation. The lack of such information could jeopardize the proliferation of biobanks in the future.

At the same time, this phenomenon, which is still a novelty in Russia, is interesting from the point of view of psychology because its psychological context is not entirely clear. Should we view the psychological significance of biobanking donation as a variation on donations in the wider sense of the word, as its usefulness for other people is not quite obvious? Or are some other mechanisms in play?

The goals of this study were to look at attitudes toward biobank donation among young Russians by using St. Petersburg State University students as subjects and to evaluate potential sociodemographic and personality factors playing a role in a person's readiness to become a donor.

According to the normative theory of altruism, values are one of the most significant predictors of altruism, along with norms and a sense of moral obligation (Feigin, Owens, & Goodyear-Smith, 2014). In its turn, altruism is one of the main motivating factors in the decision to become a biobank donor (Kettis-Lindblad, Ring, Viberth, & Hansson, 2006). Therefore, one of the goals of this study was to look at the correlation between a person's readiness to become a biobank donor and that individual's value orientations.

Method

Data were collected as part of a larger monitoring study of the lifestyles and health attitudes of students at St. Petersburg State University in October 2014. In order to guarantee the representative nature of the study, stratified sampling was used. During the first stage, proportional nonsystematic sampling was used, taking into consideration education specialization: humanities vs. natural sciences. Out of a total of 22 departments, 3 natural sciences departments and 3 humanities departments were chosen randomly. During the second stage, total sampling of all courses was used. During the third stage, proportional nonsystematic sampling was used: only those students who happened to be on the university premises on the day of the survey filled out the questionnaire.

Most of data were collected by group-administered paper-and-pencil questionnaires. Participants filled in the questionnaires anonymously in the classroom with

the research coordinators functioning as survey leaders. Participation was voluntary and did not involve monetary compensation; no identification information was collected. Participants were told that they could leave the form blank if they decided not to participate in the study. If they decided to participate, they had to sign an informed-consent form.

A total of 542 questionnaire forms met the criteria for statistical processing. Among the interviewees, 163 (30.1%) were male and 379 (69.9%) were female. The average age was 19.5 ± 2 years old.

The questionnaire consisted of several parts. This article looks at some of these parts, in particular those that correlate the most with the goals of the study:

(1) Awareness of and attitudes toward becoming a biobank donor: being aware of the term; having a notion of one's willingness to become a biobank donor; and evaluating the validity of various factors in making such a decision. This was the definition of *biobank* given in the questionnaire: "A biobank is a specialized facility for storing biological materials, for example, samples of blood, saliva, urine, or DNA, for scientific and medical purposes. Imagine that you are asked to provide samples of your blood (urine, saliva, etc.) that in the future will be used to study the nature of various diseases."

(2) The terminal values set of the Rokeach Value Survey. The students were asked to choose from a general list (N=18) not more than five values that they found the most significant.

(3) Self-evaluation of various qualities and personality traits. The informants evaluated their qualities (for example, sexual appeal, ability to withstand hardships, ability to fulfill the requirements of the learning process) on a scale of 1 to 7, where 7 stands for the maximum degree of any given quality and 1 stands for the complete lack of the quality.

(4) Evaluation of one's satisfaction with various aspects of one's life. The informants evaluated to what degree they were satisfied with their relationships (vis-à-vis classmates, professors, parents), their financial situation, their sexual relationships, and the psychological atmosphere in the department in which they were studying, on a scale of 1 to 5, where 1 means "completely unsatisfied" and 5 means "completely satisfied."

(5) Sociodemographic characteristics: sex, age, department and year of study, religious affiliation, marital status, having children.

Data analysis included calculation of the frequency distributions of the variables of interest for every university department and for the entire sample. In order to assess correlations between key variables that characterize attitudes toward becoming a biobank donor and sociodemographic and personality factors, the Pearson chi-squared test or Student's t-test was used. All the variables that indicated the existence of a significant correlation with attitudes toward biobanking in a binary model at the significance level <0.1 were entered into the logistic regression model. All statistical analyses were performed using SPSS version 16.

Results

Awareness of biobanking

Only one-fifth of the students (21.1% (17.6–24.5)) knew about the existence of biobanks, while roughly the same number believed they might have heard something about them but were not absolutely certain (19.6 (16.2–22.9)). The highest degree of awareness was demonstrated by the students who were studying biological disciplines (38.5% (28.8–48.3)), while the least informed students were those studying mathematics (8.8% (2.6–14.9)) ($p \leq 0.001$). As for the humanities, the percentage of students who had heard the term *biobank* was about 16–22% (Figure 1).
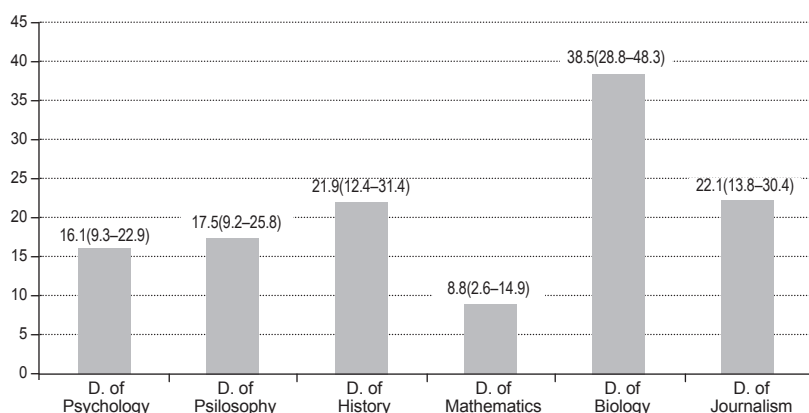

Figure 1. Percentage of students who were aware of the existence of biobanks by department, % (D. = department). The difference in rates by department was statistically significant at $p \leq 0.001$.

The degree of the students' awareness did not correlate in any significant way with their sex or the number of years that they had already been at the university. Thus, we might assume that the students' awareness of the existence of biobanks was not directly linked to studying at the university. More likely, it was acquired through other channels, possibly through the media.

Notions about readiness to become a biobank donor

The majority of the students (73.9% (70.2–77.6)) indicated that they would react favorably to an offer to donate some of their biological materials to a biobank. More specifically, every fifth student (22.9% (19.4–26.5)) was absolutely certain that he/she would do so if presented with the opportunity. Of all those who filled out a questionnaire, 5.4% (3.5–7.3) indicated that they would categorically refuse to become such donors.

The most important kind of information that the students indicated they would need in order to make a decision about becoming donors was the specific goal of the research (mean 1.6 points out of a maximum of 2) (Figure 2). Other significant factors included the following: research methods, type of biological material collected (blood, saliva, etc.), and ability to donate samples anonymously. For the

majority of those tested, the significant factors did not include payment for being a donor or the sources of research funding. In addition, the students did not consider approval of their close social circle an important factor in agreeing to become a donor. Apparently, the informants were planning to make such a decision on their own.
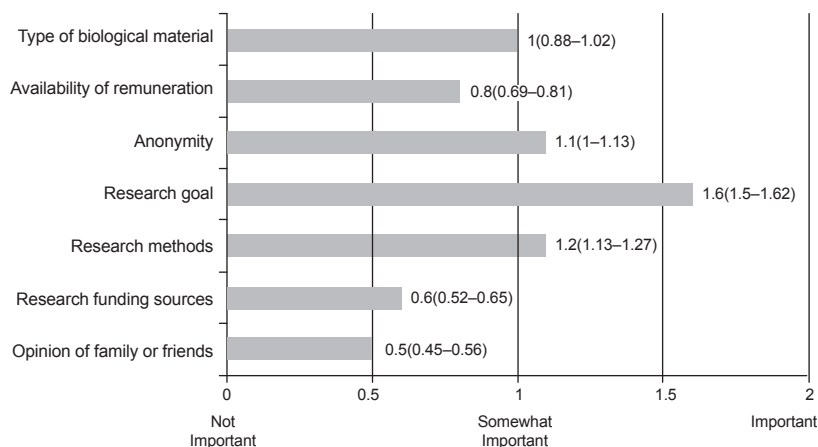

Figure 2. Importance of different kinds of information for decision-making about donorship to a biobank, *M* (0 – min, 2 – max).

A small percentage of the informants (3.2% (1.7–4.7)) also mentioned other factors that they considered important. Above all, these included the safety of the biological-material collection procedure and the ability to get feedback based on the results of the study.

On the whole, when making a decision about becoming donors, the women students thought that the goal of the proposed research was significantly more important (very important 68.9% (64.1–73.8)) than the men did (56.1% (48.1–64.1); $p \leq 0.05$); the men thought that the possibility of remuneration was more important (very important or somewhat important 71.6% (64.4–78.9)), than the women did (58.8% (53.7–63.9), $p \leq 0.01$), and the men also thought that knowledge about the organization funding the research was more important (very important or somewhat important 55.1% (47.1–63.1)) than the women did (38.7% (33.6–43.8), $p \leq 0.01$).

Factors in readiness to become a biobank donor

In this study we put forward a hypothesis about a correlation between a person's readiness to become a biobank donor and sociodemographic characteristics, including value orientations, satisfaction with various aspects of one's life, and self-evaluation of one's qualities and traits.

However, the study did not confirm the existence of any sociodemographic characteristics that could predict one's readiness to become a biobank donor. Sex, age, year of study, religious affiliation—none of these factors correlated with readiness to become a donor in any significant way. Also, no significant correlations were found with one's self-evaluation of specific qualities or with one's satisfac-

tion with life. In particular in our sample we did not find any correlation between participants' willingness to donate and how they rated their physical and mental health, sexual attractiveness, ability to withstand the difficulties of life, academic performance, or sociability. Readiness to donate also didn't correlate with participants' satisfaction with relationships, intimacy, material living standards, or job prospects.

The multidimensional model (Table 1) demonstrated significant correlations with several value orientations: the propensity to declare a willingness to become a biobank donor was demonstrated significantly more often by the students for whom some of the most important individual values were gaining knowledge and having an interesting job. At the same time, the value of leading a productive life correlated negatively with the intention to donate samples to a biobank.

Table 1. Multidimensional model of factors in readiness to become a biobank donor

Variables	Odds Ratio (OR) (95% CI)	Adjusted Odds Ratio (AOR) (95% CI)
Department of Biology (yes vs. no)	2.784 (1.743–4.448)***	2.459 (1.501– 4.030)***
Department of Journalism (yes vs. no)	0.512 (0.279–0.939)*	–
Value = being healthy	0.654 (0.981–0.435)*	–
Value = having an interesting job	1.695 (1.128–2.544)*	1.618 (1.058– 2.475)*
Value = gaining knowledge	1.834 (1.178–2.857)**	1.658 (2.65 – 1.035)*
Value = leading a productive life	0.401 (0.829–0.194)*	0.396 (0.188– 0.833)*

* — $p \le 0.05$, ** — $p \le 0.01$, *** — $p \le 0.001$

The most predictive factor in the students' readiness to become donors was studying in the Biology Department. This factor increased by 2.5 times the likelihood of a "yes" answer to the question about readiness to donate samples to a biobank. The existence of prior information about biobanking did not constitute a significant factor in one's readiness to become a donor, and this factor was not included in the final model. Thus, being a biology major constituted an independent factor in one's readiness to become a donor, and being ready to donate was not linked to higher awareness.

On the whole, the model is characterized by extremely low predictive ability, allowing us to predict less than 10% of the dependent variable dispersion (Nagelkerke R Square – 0.093), as well as by its correctly classifying 76.5% of all cases.

Discussion

The results of the study, which indicate a relatively high level of readiness to become biobank donors among young Russians (74%), correlate with the results of a number of international studies, which show about 80% of the population willing to become donors (Budimir et al., 2011; Kettis-Lindblad et al., 2006; Porteri, Pasqualetti, Togni, & Parker, 2014; Wendler, 2006;). Nevertheless, in our opinion, the study of the factors that play a role in one's readiness to become a donor is still

relevant because this knowledge guarantees that biobanks can remain viable in the long term if they do not allow the level of readiness to decrease as a result of negative influences, such as by the media (creating myths, for example).

In spite of the fact that awareness of biobanks did not figure as a significant factor in the students' readiness to become donors, we should take into consideration the experience of Western societies and be wary of insufficient awareness about biobanking among the population, as well as of a deficit of trust in official medicine and public health services, as these constitute the main barriers to biobank donorship (Kettis-Lindblad et al., 2006). Also, among the potential risks associated with biobanking, researchers see donors' fears concerning breaches of confidentiality norms—the transfer of personal (genetic) data to third parties and, as a result, stigmatization of and discrimination against donors (Lipworth, Forsyth, & Kerridge, 2011)—as up to 90% of potential donors are worried about their privacy (Budimir et al., 2011).

Our study did not reveal any influence of sociodemographic variables on one's willingness to become a donor, although it did reveal some gender differences in the biobank characteristics that were considered important by the students. Studies on attitudes toward biobank donation among different sociodemographic groups often contain highly contradictory conclusions. In particular, the correlation between one's willingness to be a donor and one's age is not clear-cut: a number of studies indicate an increase in readiness as one grows older (Kettis-Lindblad et al., 2006), while others indicate a decrease (Wakefield, Watts, Homewood, Meiser, & Siminoff, 2010).

On the whole, based on the results of studies conducted in other countries, these are the key factors in creating positive attitudes toward becoming a biobank donor: altruism, reciprocity, expectations of personal benefit from a new form of therapy, availability of direct feedback based on the results of the research, the clinical encounter surrounding donation (e.g., a test or physical examination), financial remuneration (Lipworth et al., 2011). However, Hoeyer (2008) points out, on the basis of a critical review of relevant studies, that attitudes toward donation are rigidly determined by the type of biological material being collected and by the donor's status. Thus, cancer patients are more likely to agree to become donors, while, in cohort studies, representatives of the general population are less favorable toward the idea. And, finally, relatives of potential cadaveric donors are the least likely to grant permission. It might be thus assumed that the more pressing the need for the results of medical studies, the more likely the possibility of a person's having a favorable attitude toward becoming a donor.

This study demonstrated an extremely limited influence of value orientations on readiness to become a donor. A certain degree of predictive ability can be attributed only to the dominant role in the personality structure of the values of gaining knowledge and of having an interesting job (perhaps, taking into consideration the nature of the study target group, of having an academic career in research). Thus, it is difficult to offer a meaningful interpretation of the moderately negative correlation that was revealed to exist between one's readiness to become a donor and valuing leading a productive life value.

Our research also revealed that studying biology can be a factor in one's readiness to become a donor. It might be argued that students who enroll and study in

the Department of Biology take part in a natural selection and self-selection process whose criteria include belief in the progress of biological science, biotechnology, and genetic engineering, as well as the absence of an irrational fear of science as a whole, and that these criteria allow the formation of favorable attitudes toward donation.

Limitations

This study has a number of limitations. It was conducted using data from a specific subgroup of the general populace, students, whose characteristics include a young age and a high level of education with an emphasis on academic learning. As results of Western studies indicate, a high level of education invariably leads to an increase in the level of readiness to become a biobank donor (Hoeyer, 2008; Wakefield et al., 2010). Also, as in the majority of studies on this subject, a significant limitation of our study consisted in the target variable used—that is, one's attitude toward becoming a donor. It is well known that one's readiness or intention to engage in an activity cannot always be seen as a perfect predictor of real behavior. Therefore we must realize that in reality the percentage of people who agree to and actually donate their biological materials to a biobank may turn out to be significantly lower.

Future directions of biobanking attitudes and behavior in Russia might be expanded to studying different groups of participants, including hospital patients with different conditions. From a psychological perspective it seems important to further study the motivation behind the willingness to become a biobank donor: Is it influenced by the same factors as other altruistic behaviors (blood donorship, giving to charity, for example), or is it of a different nature?

Conclusion

This study demonstrated that today sociopsychological attitudes among the general population (at least among the subgroup studied, students) do not pose a problem for further development of biobanking in Russia. Ours is the first study in Russia that has tried to offer an empirical evaluation of attitudes toward biobank donation among young Russians.

Acknowledgments

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The contamination of young people's notions about narcotics and psychoactive substances as a threat to psychological security

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The study described in this article investigated contemporary young people's perceptions of drugs and psychoactive substances (PAS). In the course of the research the following hypothesis was tested: in young people's perceptions about drugs and PAS there are differences in emotional coloring, coherence, and tolerance. J.-C. Abric's structural approach was used as the basic methodology. The free-associations method provided the bulk of the empirical material. The results obtained were processed via prototypic analysis (by P. Vergès's method), indexing of emotional associations (by E.E. Pronina's method), and frequency and content analysis.

As a result the core and the periphery of the perceptions of youth about drugs and PAS were described, and generalized notional categories that synthesize the structural elements of the perceptions were identified. The study revealed that the perceptions of young people about drugs and PAS do differ in coherence, tolerance, and emotional coloring. Perceptions of drugs are firm, consistent, and negative, while perceptions of PAS are less coherent but dynamic and have an ambivalent emotional coloration. The results are of prognostic importance for understanding young people's attitudes toward drugs and PAS and can be used to design programs and measures directed to the prevention of PAS and drug abuse.

Keywords: perceptions, structure of perceptions, core and periphery of perceptions, perceptions of drugs, perceptions of psychoactive substances

Introduction

PAS use is far from being a new phenomenon. Throughout history PAS have been used for various purposes: from medical use to use in rituals and ceremonies (Lang, 2004).For instance, alcohol use extends back at least 8,000years; tobacco has been used for about 7,000years; mention of opium use at least 7,000 years ago was found in Mesopotamia; cannabis under different names has been known in many cultures

throughout history; reference to hallucinogenic mushrooms shows up in ancient Hindu texts, and there is archeological evidence of their use in 7500 B.C. Much evidence demonstrates that alcohol abuse and the civil unrest associated with it have been widespread throughout history. PAS intake used to be and still is a part of human behavior. Drug dependence "represents a complex of medico-biological, personal and socio-biological disorders and maladjustments where cause-and-effect relationships form complicated feedback loops and paths and PAS can become a means of personality disintegration" (Petrenko, 2009, p. 275).

According to the United Nations Office on Drugs and Crime (2014), every year about 200,000 people worldwide die from drug abuse; the use of forbidden narcotics will grow by 25% by 2050;and this increased use is being triggered by the growth of urbanization, industrialization, and population in developing countries.

A more precise understanding of the reasons for PAS use implies a certain structure for that use that likely includes a wide range of biological, psychological, social, and cultural factors. In 1977, George Angel, a psychiatrist, offered a bio-psycho-social model of PAS use (Angel, 1977):

Biological factor
- Genetic vulnerability to risk factors
- Genetic vulnerability to pharmacological medication effects
- Pharmacological medication effects

Psychological factor
- Training, experience
- Self-esteem
- Cultural and spiritual beliefs
- Stress and style of coping with crises
- Mental and psychological health

Sociocultural factor
- Sociocultural environment
- Economic and ecological conditions
- Exposure to risk and the character of defensive factors (including influence, social networks, and social identity)

All these factors dynamically interact and change in the course of time.

Social and cultural differences also affect PAS use. In particular, some religions restrict or forbid the use of some pharmaceutical products (Mormons, for example, do not drink tea or coffee because of a caffeine taboo).Other confessions integrate substances into rituals and rites. Because of these religious directives, the problem of PAS use and proper preventive measures ought to be interpreted in the context of specific cultures and their features. Asmolov states: "By considering the stereotypical behavior accepted in a certain country one can predict to a greater or lesser extent typical social actions of an individual as a member of this or that social group"(2001, p. 74).

Addiction, or neuro-adaptation, occurs when a drug is necessary for an organism to function normally. Addiction has a physiological component — that is, cells adjust to the repeated effects of a pharmaceutical product and then require the given substance in order to gain homeostasis.

Psychoactive agents also cause psychological dependence, in which a person must take a certain substance to cope with such emotional states as anxiety, anger, depression, guilt, and boredom (Ryder, Salmon, & Walker, 2001).

> Different approaches understand the term *motive* or another notion describing its functions to trigger one's behavior as the purpose of action realized by the subject, unconscious drives determining observable behavior patterns (psychoanalysis), general organismal activation associated with the actualization of needs external relative to the organism (drive theory), or the subject stimulus or cue that triggers this or that behavior program (behaviorism, ethology), etc. (Petrenko, 1988, p. 207)

Modern experts give two main reasons for narcomania: drug takers are motivated to use drugs to experience the effect of positive agents (hedonistic consequences of using drugs) and to avoid a symptom of withdrawal. "From a motivational point of view dependence can be equated with negative affect development" (Koob, 1997, p. 13).

PAS use can negatively influence the well-being of individuals, families, communities, and countries. PAS abuse is associated with mental health disorders including suicide. Foreign surveys demonstrate the dynamics of addiction development with their traumatic impacts (Table1).

Table 1. Drug-use levels

Level	Definition
Abstinence	No drug use.
Experimental	Trying a drug and using only once or a few times. (e.g., using LSD once).
Recreational	Using a drug for leisure. The use is usually planned and controlled, and may be specific to particular social situations or settings, such as parties, clubs or at home with friends. (e.g., taking ecstasy at a dance party).
Regular	Using a drug as a normal part of one's lifestyle, although use may still be controlled. (e.g., a glass or two of wine with dinner).
Dependence	Using a drug a lot and needing it to feel "normal", to cope with day-day problems, or to stop the symptoms of withdrawal (e.g., using heroin three times a day and feeling physically sick if heroin is not used).
Hazardous	Using a drug in such a way that it will probably cause harm, but has not yet done so. This includes taking serious risks when using a drug, such as: taking excessive amounts of the drug; using a combination of drugs that may interact with each other; sharing injecting equipment; or driving under the influence of the drug.
Harmful	Drug use that has demonstrably led to harm — physical, social or emotional.

Source: Quoted in Rickwood D., Crowley M., Dyer K., Magor-Blatch L., Melrose J., Mentha H. & Ryder D., 2005. p. 9; from Pols & Hawks (1992).

Contemporary young people face a lot of risks including drug abuse, violence, and AIDS/HIV. The risk of becoming a drug addict involves relations between two

aspects: risk factors (for instance, family history of addiction, relations with peer drug-takers, aggressive behavior, low self-control) and defensive factors (for example, parents' support) (Wills, McNamara, Vaccaro, & Hirky, 1996). The level of interpersonal trust also matters. "Mistrust blocks access to the emotional, intellectual, and activity-related resources supporting life and undermines faith in the possibility of virtue and morality" (Dontsov & Perelygina, 2014b, p. 40).Risk and defensive factors can be biological, psychological, or of a sociocultural character.

Early-childhood interactions take place within the family setting and can be positive or negative. Children are more often exposed to risk when there is:

- a lack of safety within the family circle
- an ineffective upbringing
- a chaotic family atmosphere
- a lack of bonding with adults
- drug abuse among parents

These factors interrupt family ties and threaten a child's feeling of security. However, a family can be a defensive factor when:

- a strong bond exists between the child and the family
- the parents are involved in the child's life
- the child's upbringing meets the material, emotional, cognitive, and social needs of the child
- the parents provide fixed limits and consistent discipline

Finally, critical or sensitive periods in a child's development can increase the effectiveness of defensive factors. Mutual affection and emotional bonds between parents and children, as a rule, are begun during infancy and early childhood. If such relationships do not develop during childhood, a family is unlikely to serve as a defensive factor in a child's further life. Dontsov argues that "not less than 3/4 of all children and adults irrespective of gender actively discuss positive and negative events in their life with parents, intimate partners, friends" (2014, p. 440). A deficit of parental warmth and the presence of family conflicts are key predictors of teenagers' behavior problems and depression (Spoth, Kavanagh, & Dishion, 2002). Healthy family relations provide a "protective capsule" for children even though they are later subject to risk factors(for instance, stress and poverty) (Galambos, Barker, & Almeida, 2003).

Other risk factors are connected with a child's relationships outside the family: at school, with peers, with teachers. Communication problems within a child's family and school group can be detrimental to the child's emotional, cognitive, and social development. Among social risk factors are the following (Dishion & Owen, 2002; Kellam, Brown & Fleming, 1982; Smith & Fogg, 1979):

- inappropriate in-class behavior (aggressiveness and impulsiveness)
- poor academic record
- companionship with peers taking drugs

Boys' aggressive behavior and girls' learning difficulties are seen as major causes of interpersonal problems among children of the same age. These problems,

in turn, can lead to social isolation and deviant behavior including drug use. Research indicates that children aged 7–9 with poor academic records and inadequate social behavior are likely to take PAS at the age of 14–15 (Robertson, David, & Rao, 2003).

When the time to leave lower school comes and emotional bonds with parents and teachers disappear, teenagers become increasingly affected by a wide circle of age-mates and spend more time without any supervision. Less parental control and involvement increase the risk of PAS use, aggression, and violence (Dishion, Patterson, Stoolmiller, & Skinner, 1991).

Among psychological factors prompting conditions for teenagers' drug abuse the most important one is a dysfunctional family (Lichko, 1997).In addition, numerous surveys show that many teenage drug addicts have grown up in a single-parent family. Family problems serve as a background that pushes teenagers to become asocial, especially those with certain types of character (Kurek, 1996). Gannushkin (1933/1964) arguedthat constitutional proneness to drug addiction is most characteristic of people with epileptoid, unstable, cycloid, and hysteroid accentuations. The risk of drug abuse is higher for those with epileptoid and hysteroid accentuations. People with hyperthymic temperament express interest in hallucinogenic substances and inhaling powder, which can evoke colorful, bright images, and they are inspired "to try it all." Teenagers with hysteroid accentuation prefer feeling good; they gain some sort of pacification that is produced by tranquilizers. Young people with schizoid personalities tend to use opiates in order to feel emotionally pleased. However, teenagers with epileptoid, unstable, and hyperthymic accentuations are prone to narcomania and toxicomania (Gannushkin, 1964).

The human life journey is first and foremost characterized by diverse events, and some of them are interpreted as traumatic.

> The traumatic character of a certain event depends on the meaning it conveys for an individual, i.e., on a stressor's personal meaning. Indeed, one and the same event can traumatize one person, while another seems not to be piqued by it, i.e., there exist individual differences in perceiving and reacting to the given, concrete stressor. That is why without personal processes (ones that determine meaning formation) we cannot adequately define both stress intensity and the very fact of the event's stressful impact" (Magomed-Eminov, 1998, p. 170).

Traumatic events—"life focal points" (S.L. Rubinstein)—largely determine individuals' lives, both their psychological and physical health and their psychological ill-being. "In the modern age, the depersonification of social organizations does not eliminate sources of and grounds for tense situations that affect the individual" (Dontsov & Perelygina, 2013).

In 1991, Antonyan and Guldan conducted a comparative semantic analysis aimed at indicating the motives for drug use and drug withdrawal among teenagers with asocial behavior (main group) and schoolchildren (control group). Members of both groups expressed curiosity about and interest in drug use. For this reason the question of curiosity as a specific motive should be investigated further. All the subjects intended "to get rid of troubles" with the help of narcotics. In situations where drug intake was likely, the control group appeared to be immune to age-

mates' influence; they were more tempted by consciousness alteration, the opportunity to feel good. Asocial teenagers seemed to be more affected by peers (namely, by the oldest one in the group) when choosing a behavior pattern that favored drug use (Antonyan & Guldan, 1991). Petrovskaya points out: "Human life performance as a chain of choices implies being grounded in inner orientations as well as in external conditions and circumstances" (2002, p.325).

In a study Brunelle, Cousineau, and Brochu (2005) identified the following reasons for drug use:

Curiosity. Many of the teenagers studied indicated that they tried drugs out of curiosity, simply to feel their effect. For the majority their first experiment took place in other teenagers' company.

Pleasure. Regardless of what level or stage of drug use was achieved by the teenagers, their initial motives remained hollow. They used such terms as *fun* and *great*. For experienced drug users, pleasure is the primary motive.

Family identity. Many of the teenagers started to take narcotics because of the example set by their parents, brothers, or sisters. Some changed from being passive observers to being active participants.

Age-mate affiliation. Drug use was also one way to join a group.

Desire to spend illegally gained income. Some of the teenagers explained that drug use was the only way to quickly get rid of illegally gained money (from drug trafficking or stealing).

Among the reasons for the significant vulnerability of youth is the instability of their self-concept. Some specific features of self-concept can act as a factor in drug addiction. Self-concept is shaped through the influence of the social milieu and defines a young person's interaction with it. Hence, the more unstable social factors are, the less stable self-concept is likely to be. One other important aspect of the self-concept of youth is body image. Because their bodies change and development never stops, the same happens to their self-concept, together with ways of interacting with the environment. Proneness to crises and conflicts is also explained by the fact that a young person experiences not only the need to join a certain social group but also, at the same, the need to separate from a habitual environment and even confront it in order to attain and to unleash the individual self. Self -perception is a powerful phenomenon that requires continual self-expression and discharge, but, simultaneously, it is indefinite, filled with the experiences of other people: parents, older friends, and other reputable people. This contradiction between potential ability and the real substance of activity generates inner tension the release of which becomes urgent and vital. In young people's opinions, the most effective way to defuse tension is often to engage in some form of deviant behavior, including drug-taking (Raigorodsky, 1996).

The study of social perceptions can be useful for understanding the dynamics of person/world relationships, especially with regard to health (Foster, 2003; Howarth, Forster, & Dorrer, 2004). Although it seems natural to examine constructs that respondents use to describe drug-taking, only a small number of research papers in this field can be found. There exist works on perceptions of tobacco use (Echabe, Guede, & Castro, 1994; Stjerna, Lauritzen, & Tillgren, 2004), on perceptions

about drug or alcohol abuse among particular groups of the population (da Silva & Padilha, 2011), on parents whose children are drug-takers (Nuño-Gutiérrez, Álvarez-Nemegyei,&Rodriguez-Cerda, 2008), on students (Cabral, Da Cruz Farate, & Duarte, 2007),on teachers (Martini & Furegato, 2008), and on heavy drinkers (Alvarez, 2004; da Silva & de Souza, 2005). An article by Demers, Kishchuk, Bourgault, & Bisson (1996) is of special interest. They considered relationships between strong alcohol use and eight social perceptions. They argue that perceptions should be examined independently of social context and the respondents' life experience.

Although many authors underscore the importance of cognitive and emotional processes for understanding behavior (Beck & Freeman, 1990; Brown & Harris, 1989; Lazarus, 1999), youth perceptions about drugs and PAS are not sufficiently attended to. Young people's views are not taken into account, even though they are a useful and significant source for inquiring closely into this big problem facing our civilization.

Objective and tasks

The goal of our study was to identify and analyze youth perceptions about drugs and PAS. We set the following tasks:

- to indicate the semantic content of the notions *drugs* and *psychoactive substances* and attitudes toward these phenomena in the everyday consciousness of young people
- to juxtapose the scope of meanings of and the emotional responses to drugs and PAS
- to define how well perceptions about drugs and PAS are formed in the everyday consciousness of young people and to discover the degree of stability of these perceptions
- to find out attitudes toward drug-takers

Hypothesis

Youth perceptions about drugs and PAS differ in coherence, stability, and emotional coloring: drug perceptions are fixed, coherent, and negatively charged; PAS perceptions are less coherent, are dynamic, and have ambivalent coloration.

Method

The methodological foundation of the survey's first stage was J.-C. Abric's structural approach (Abric, 2001).The free association method was chosen for identifying perceptions. The data obtained were further processed and analyzed with the help of prototypic analysis (Vergès, 1992), indexing of emotional associations (Pronina, 2000), and frequency and content analyses.

In the first stage of data processing, the structural elements of drug and PAS perceptions were defined. The analysis was performed for associations mentioned by at least five subjects. At the second stage content analysis was carried out to identify generalized notional categories synthesizing those associations that were included in the structure of perceptions under consideration.

The sample consisted of students aged 18–23 (*M*=20.96; *SD*=3.79) who were residents of Ekaterinburg and the Sverdlovsk region. The survey was administered to 267 people, 131 males and 136 females. The sample population correlates with a general one in key demographic parameters: gender, age, education, type of residence.

Results

With the use of the free-association method, 1,282 associations with the notion *psychoactive substances* were received in the course of the survey; on average these responses came to 4.8 per respondent. The list of notions contains 290 words and word combinations. For these words and combinations, 595 associations entered the PAS perception core zone and its periphery (46.41% of the total number of associations expressed by the respondents).

In the course of the empirical study 1,096 associations were given in response to the word *narcotics*, which is an average of 4.1 per subject. The list of concepts contains 189 different words and word combinations. For these words and combinations, 642 associations entered the core and periphery zones of perceptions about drugs (58.57% of the total number of associations produced by the respondents).

Results analysis

The structure of PAS perceptions

The analysis of the PAS perception core proves that this phenomenon was connected with narcotics, and in the respondents' consciousness it was associated with pills, alcohol, and energy (Table 2).

Table 2. The structure of *drug* and *PAS* perceptions

Structural elements	Associations (frequency; average ranking)	
Notions	**Drugs**	**PAS**
Core zone	Addiction (158; 2.17) Disease (139; 2.16) Harm (127; 2.29)	Narcotics (78; 2.05) Energy (65; 2.44) Alcohol (59; 2.52) Pills (47; 2.66)
Zone of potential perception alteration in the periphery	Syringe (44;2.69) Destruction (41; 2.78) Death (26; 2.89) Problems (20; 2.99) Money(19; 3.01)	"Weed" (25; 2.58) Smoking (32; 3.04) Music (34; 3.52) Creativity (31; 3.11) Cigarettes (21; 2.74) Stimulation (23; 2.69) Medication (21; 2.86) Adrenaline (25; 2.56)
Periphery perception system itself	Loneliness (25; 3.16) Crime (23; 3.34) Heroin (20; 3.69)	Brain(18; 3.11) Club (26; 3.23) Energy shots (22; 3.21) Novelty (20; 3.16) Efficiency (20; 3.2) Chemistry (20; 3.21) Taboo (8; 3.02)

The core zone of PAS perceptions contains descriptions of PAS themselves—"narcotics," "alcohol," "pills"—as well as their aftereffects—"energy." In other words, the core includes perceptions existing in society. As a rule, the meaning of these perceptions is negative ("narcotics"), although some of the perceptions have dual meanings ("alcohol" and "pills"). The notion of "energy" in the core zone indicates that the "arousal" generated by PAS was treated by the young people mostly as a source of energy, vitality. The core-zone elements are specified by the peripheral-zone elements: on the one hand, they describe PAS themselves as perceived by the youth: "narcotics," "alcohol," "pills" (in the core zone), and "weed," "cigarettes," "medication," "energy shots," "chemistry" (in the peripheral zone); on the other hand, the intake of PAS is illustrated by the associations "music" and "club", which makes it possible to conclude that PAS were an integral attribute of club culture in the consciousness of the youth. Lastly, the perceptions in the peripheral zone point to the consequences of PAS use: "creativity", "stimulation", "adrenaline", "novelty", "efficiency". To put it differently, the aftereffects of PAS use do not have negative coloring, although such elements as "taboo" have a place in the periphery; this placement correlates with the inclusion of the perception "narcotics" in the core zone.

The structure of drug perceptions

According to Table 2 the core zone of *drugs* contains the perceptions "addiction," "disease", and "harm". The zone of potential perception alteration includes "syringe," "destruction", "death", "problems", "money". Lastly, the periphery perception system unites the elements "loneliness", "crime", and "heroin". The core-zone elements are specified by the periphery elements: on the one hand, these elements indicate the physical consequences of drug intake—"addiction" , "disease" (in the core zone), "destruction", "death" (in the periphery); on the other, they point out the social effects of drug intake: "problems", "loneliness", "crime" (in the periphery system). Thus, differences exist in the perceptions of PAS and drugs: PAS perceptions do not convey a pronounced negative evaluation, whereas drug associations in the core zone bear strictly negative emotional coloring ("addiction", "disease", "harm"). In addition, drug perceptions include the means of use: "syringe", "money", "heroin". Here we also observe another distinctive difference in PAS and drug perceptions: whereas PAS are taken via smoking and the ingestion of pep pills, drugs are associated with intravenous injections ("syringe", "heroin"). Drug perceptions do not describe their intake, while PAS perceptions give a clear picture of this aspect. We can thus conclude that psychoactive substances and their intake were more a part of the youths' practical experience than were drugs and their intake.

Elements of the drug-perception core zone coincide with narcomania-perception elements indicated in Beresina's survey (Beresina, 2011), as well as in the data of Bovina, Dvoryanchikov, Konoplyova, Kobalyov, and Konkin (2012). We can thus conclude that there is evidence of the equality of object perception and, hence, stability, sustainability, and a high degree of consistency in the youths' perceptions of drugs.

Comparative analysis of PAS and drug perceptions

Comparison of the content and structure of youth perceptions of PAS and drugs allows us to conclude that their perceptions of PAS were less consistent and homogeneous than their drug perceptions. Such data as the numerical dominance of notions expressed in response to *psychoactive substances* over those expressed in response to *drugs* (290 and 189, correspondingly) confirm this conclusion. In addition, the frequency of associations in the core of drug perceptions was a lot higher than in the core of PAS perceptions. Thus, for instance, the notion "narcotics" (the most numerous in the core of PAS perceptions) was stated by just 29% of the respondents, while the notion "addiction" (the most numerous in the core of drug perceptions) was stated by 59% of the respondents. Finally, the core of the drug perceptions contained 66% of the total associations in its structure. In the case of the PAS perceptions, this indicator accounted for just 41% of the total.

In order to make generalizations, content analyses of the associations included in the core and the periphery zones of PAS perceptions and of drug perceptions were performed. The following data were obtained for the PAS perceptions: substances ("pills," "narcotics," "alcohol") constituted 37.01% of the associations, intake situations ("music", "club") constituted 17.41%, and aftereffects ("energy", "efficiency") constituted 22.4%. These categories thus made up 76.82% of the total. The following data were obtained for the drug perceptions: means ("syringe", "heroin")—11.9%, physical effects ("death", "disease")—28.25%, social consequences ("loneliness", "problems")—22.31%. In a restructured variant all these categories made up 62.46%.

Thus, the drug perceptions in the consciousness of the young people in the study were mainly concerned the negative effects of their use, both physical and social (50.56%). At the same time the negative character of the effects of PAS intake was represented to a smaller degree (22.4%). "The social responsibility of site-owners and providers of electronic information whose content is detrimental to children's health and development" should be emphasized (Dontsov & Perelygina, 2014a).There has been an intense media campaign aimed at building awareness of negative drug-intake effects, but PAS intake effects are given considerably less attention, and thus young people possess limited knowledge about the harm caused by PAS.

However, in regard to the substances themselves (drug or PAS), a reverse tendency can be observed. Drugs were much less represented in the consciousness of the youth than psychoactive substances (11.9% and 37.01% correspondingly). One probable explanation is the greater availability (real or potential) of PAS for young people.

Further analysis involved categorization of PAS. All associations mentioned were divided into groups of PAS regarded as legal or illegal under Russian Federal legislation and international agreements. The free circulation of illegal PAS is forbidden; they are regulated by the state, and their distribution is restricted and subject to state control. None of the subjects mentioned such PAS as tea and coffee, which are taken on a regular basis. The most common legal PAS in the youths' perceptions were cigarettes, alcohol, and energy shots. Still, the representation of legal substances in their consciousness was much smaller than the representation

of illegal ones, and perceptions about their aftereffects of illegal substances in comparison with the aftereffects of narcotics were insignificant. To put it differently, the young people in their consciousness mainly related narcotics to PAS, but they remained unaware of the aftereffects of their use when classifying them as PAS.

The emotional component of PAS and drug perceptions

To evaluate immediate affective reactions to the trigger words "PAS" and "narcotics," emotional indexing of the associations was conducted (by E.E. Pronina)—that is, the level of psychic tension upon presentation of these triggers was estimated by defining neutrality and polarity indexes for each stimulus.

Identification of the neutrality index (IN) produced the following results: the IN for the stimulus "narcotics" was -0.89; the IN for the stimulus "PAS" was -0.2. The IN value for the trigger "narcotics" can be interpreted as an intensification of and a tendency toward emotion. The IN for the stimulus "PAS" indicates instability of emotional equilibrium. So, the stimulus "narcotics" gave rise to a more pronounced emotional reaction than did the stimulus "PAS."

To discover the direction of this emotional response, the index of polarity (IP) was determined. The IP for the stimulus "narcotics" was -0.78; for the stimulus "PAS" it was 0.3, which means that the prevailing emotions of the young people toward narcotics were negative, while PAS evoked ambivalent, contradictory emotions. In sum, their reactions to PAS were characterized by ambivalence and an inner conflict of emotions. Their response to narcotics was inner resistance at the emotional level.

Conclusion

The young people's commonplace perceptions of PAS were characterized by dynamism; they were at the stage of formation. But the young people's perceptions about narcotics were tolerant, coherent, and stereotypical. In our view, these results can be explained by the fact that *psychoactive substances* has become a household word quite recently. In addition, the way it is discussed compared with the notion *narcotics* is a lot more ambiguous.

Comparing the emotional fullness of the perceptions of PAS and narcotics allows us to conclude that narcotics as a phenomenon had extremely negative coloring in the respondents' consciousness, while PAS are partly associated with positive emotions and, on the whole, had an ambivalent emotional meaning for the young people. Thus, "disease", "death", "harm" as drug-intake aftereffects were opposed to PAS-use aftereffects—"efficiency", "energy", "creativity." Therefore, it seems quite rational to clearly differentiate one notion from the other when they are used in the media, to avoid making them synonymous (since naming drugs *PAS* erodes the accepted perception of them as a negative phenomenon).

The ill-management of providing information about narcomania with the aim of preventing youth narcotism leads to diverse, tattered, and inconsistent youth perceptions about narcotism. Dramatically negative, emotional attitudes to the "drug taker" stereotype often coincide with interest in drug use. We observed divergences

in motives and motivations that, in their turn, result from a mismatch of youth-subculture rules, norms, taboos, and realities and reflect cognitive dissonance in the perceptions of young people about the narcomania problem.

The analysis of youth perceptions about drugs and PAS provides the empirical platform required for development of preventive measures aimed at shaping antidrug sentiments among young people and reduced drug use. Sharply negative attitudes to drug-takers often coincide with interest in their use. Social perceptions play the role of particular filters through which information concerning drugs and their harm to health is passed. Accordingly, effective antidrug programs call for regular monitoring of young peoples' perceptions of drugs and PAS.

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PERSONALITY PSYCHOLOGY

An existential criterion of normal and abnormal personality in the works of Carl Jung and Carl Rogers

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This article is the third in a series of four articles scheduled for publication in this journal. In the first article (Kapustin, 2015a) I proposed a description of a new so-called existential criterion of normal and abnormal personality that is implicitly present in the works of Erich Fromm. According to this criterion, normal and abnormal personalities are determined, first, by special features of the content of their position regarding existential dichotomies that are natural to human beings and, second, by particular aspects of the formation of this position. Such dichotomies, entitatively existent in all human life, are inherent, two-alternative contradictions. The position of a normal personality in its content orients a person toward a contradictious predetermination of life in the form of existential dichotomies and necessitates a search for compromise in resolving these dichotomies. This position is created on a rational basis with the person's active participation. The position of an abnormal personality in its content subjectively denies a contradictious predetermination of life in the form of existential dichotomies and orients a person toward a consistent, noncompetitive, and, as a consequence, one-sided way of life that doesn't include self-determination. This position is imposed by other people on an irrational basis. Abnormality of personality interpreted like that is one of the most important factors influencing the development of various kinds of psychological problems and mental disorders — primarily, neurosis. In the second article (Kapustin, 2015b) I showed that this criterion is also implicitly present in the personality theories of Sigmund Freud and Alfred Adler, although in more specific cases. In the current work I prove that this criterion is also present in the personality theories of Carl Jung and Carl Rogers, where it is implicitly stated in a more specific way. In the final article I will show that this criterion is also implicitly present in the personality theory of Viktor Frankl.

Keywords: human nature, human essence, existential dichotomy, normal personality, abnormal personality

Introduction

In the first article in this series (Kapustin, 2015a), I described a so-called existential criterion of normal and abnormal personality implicitly present in the works of Erich Fromm (1942, 1947, 1977, 1947/2012) based on an analysis of his works. Fromm developed his theoretical understanding of personality based on the philosophical branch of so-called objective humanistic ethics, which proposes a certain view of how a human being should live. The ultimate moral imperative of a human being who is following what should be considered a standard of life involves the self-determination of values that facilitate living in accordance with human nature.

Based on this school of thought, Fromm proposed his own theoretical concept of human nature. This concept has two characteristics that Fromm considered essential. The first characteristic is that in human life there are existential dichotomies, which are inherent, two-alternative contradictions. They appear to a person as problems requiring solution. The second characteristic is that a human being has self-determination.

The most important concepts in the works of Fromm are concepts of the productive and the nonproductive personality, which are characterized by particular features of content and the formation of the position of a personality in relation to these two characteristics. Fromm defined this position as a scheme of orientation and worship. If the position of a personality in its content and in its way of formation facilitates implementation of these two characteristics, such a personality was defined by Fromm as productive; if not, he defined it as nonproductive. From the point of view of objective humanistic ethics the way of life of a productive personality is a norm of human life because it corresponds to human nature. Thus a productive personality can be considered a normal personality; a nonproductive personality deviates from this norm and is abnormal.

Because Fromm considers the essence of human life to be characterized by existential dichotomies and self-determination, the position of a productive (normal) personality is compromising in its content, matching the contradictive structure of human life in the form of existential dichotomies, and it is created by oneself, based on life experience and reason — that is, on a rational basis.

On the contrary, the position of a nonproductive (abnormal) personality denies the contradictive structure of human life in the form of existential dichotomies orienting the person toward a consistent, noncompetitive, and, as a consequence, one-sided way of life. A specific feature of this position is that it is imposed by others and is based on wishes and feelings toward them — that is, on an irrational basis. From the point of view of Fromm, abnormality of personality interpreted like that is one of the most important factors influencing the development of various kinds of psychological problems and other mental disorders — primarily, neurosis.

Given that in the works of Fromm the criterion for differentiating normal and abnormal personalities is specific features of their position toward existential dichotomies, I mark this criterion as existential. According to this criterion, normality and abnormality are determined first by special features of content and second by particular aspects of the formation of a position toward existential dichotomies, which are entitatively existent in human life and are inherent, two-alternative contradictions that appear to a human being as problems requiring solution.

The essential attribute of a normal personality is a person's orientation toward the contradictious predetermination of life in the form of existential dichotomies and the need to search for compromise in their resolution. A distinct feature of the formation of this position is that it develops on a rational basis with the active participation of the person — that is, on the basis of knowledge, the source of which is the person's own experience and reason. The position of an abnormal personality subjectively denies the contradictious predetermination of life in the form of existential dichotomies and orients a person toward a consistent, noncompetitive, and, as a consequence, one-sided way of life that doesn't include self-determination. Such a position is imposed by other people on an irrational basis: on the basis of wishes for and feelings toward them.

In the second article in this series (Kapustin, 2015b) I showed that this criterion is also implicitly present in the personality theory of Sigmund Freud towards more special *existential dichotomy of nature and culture*, and in the personality theory of Alfred Adler towards more special *existential dichotomy of superiority and community*.

Objectives

The main objective of this article is to show that the new existential criterion of normal and abnormal personality based on the works of Fromm is implicitly present in the theories of personality of Carl Jung and Carl Rogers, although in a rather special way. In the final article in this series, I will show that this criterion is also implicitly present in the personality theory of Viktor Frankl.

The existential criterion in Carl Jung's theory of personality

Theoretical discussion

Carl Jung's view of personality was based on his more general idea about the structure and development of the human mind, which he regarded in turn within the context of biological evolution and anthropogenesis. In his opinion, a mind as a modern human has it, which Jung called consciousness or a conscious mind, has not always been intrinsic but was gradually formed in the long process of evolution, which lasted millions of years.

Describing the process of the evolution of a human mind, Jung formulated an important theoretical law, similar to the one existing in the theory of biological evolution: during the process of phylogeny there emerge in the human mind not only qualitatively new ways of representing the world, typical for the different stages of development, but also their conservation, in rudimentary forms at least. Hence, from the point of view of Jung, the human mind is a multilayered formation, in which the conscious mind is only one, superficial layer. Under it are more archaic layers, corresponding to the qualitatively different developmental stages of the human mind. These layers gradually descend to the developmental stages of the minds of animals, evolutionary ancestors of human beings.

Jung defined all these archaic layers of the human mind, positioned under the upper conscious layer, as the *collective unconscious*. The content of the collective

unconscious consists of the so-called *archetypes*, preserved traces of archaic ways of representing the world, which pertain to the predecessors of modern, civilized human beings.

In addition to consciousness and the collective unconscious, these two massive layers of a human mind that appeared in the process of evolution, Jung pointed out a third layer, which is structurally positioned between them. He called this third layer the *personal unconscious*. It represents a structural field of mind, which also contains unconscious content, but, distinct from archetypes of the collective unconscious, it emerges during the process of an individual human life.

The most important statement of Jung's theoretical model describes the relationships between the conscious and the unconscious, which includes at the same time the personal and the collective unconscious. As Jung pointed out, the unconscious performs a compensatory function in relation to consciousness. This statement is, in turn, closely related to Jung's more general philosophical ideas about the nature of human life, so it is worth looking at them in a detailed manner.

Characterizing the nature of human life, Jung pointed out that it is objectively set as a unity of opposites:

> Man's real life consists of a complex of inexorable opposites — day and night, birth and death, happiness and misery, good and evil. We are not even sure that one will prevail against the other, that good will overcome evil, or joy defeat pain. Life is a battleground. It always has been, and always will be; and if it were not so, existence would come to an end.(1964/1969, p. 85)

In another place, characterizing this principle of human life, he wrote:

> everything human is relative, because everything rests on an inner polarity; for everything is a phenomenon of energy. Energy necessarily depends on a pre-existing polarity, without which there could be no energy. There must always be high and low, hot and cold, etc., so that the equilibrating process — which is energy — can take place. (1917, 1928/1972, p. 75)

According to Jung, most people do not take into account this characteristic of human life. Instead of living in accordance with their nature — that is, considering the necessity of having both polarities simultaneously present in their lives — they take a one-sided position, or, in his terms, a one-sided conscious attitude. Such people acknowledge only one life aspect as meaningful and important, and, at the same time, they devaluate and deny the importance and meaning of the opposite. As Jung wrote:

> The very word 'attitude' betrays the necessary bias that every marked tendency entails. Direction implies exclusion (1923/1971, p. 83).

The compensatory function of the unconscious consists in its ability to perceive the one-sidedness (bias) of the conscious attitudes of a person and to react to them in a particular way. One such reaction of the unconscious is creating the images of a dream, which should be regarded as a symbolic language; dreams allow the un-

conscious to point out to a person the one-sidedness of conscious attitudes and the necessity of compensating for it in order to establish accord between these attitudes and the principle of human life: the principle of the unity of opposites.

The existential criterion of normal and abnormal personality is implicitly set in Jung's works, in his theoretical conceptualization of personality, which is, respectively, nonpredisposed and predisposed to developing psychological problems of different kinds and mental disorders. From my point of view, in the theory of Jung normality and abnormality of personality (respectively, nonpredisposition and predisposition to developing psychological problems and mental diseases) can be characterized using its three main specific features: the level of integration between the conscious and the unconscious mind; specific features of conscious attitudes, which determine how each person resolves the problem of opposites, entitatively existent in life; and the degree of freedom each person has to master behavior and organize life as a whole.

An abnormal personality (predisposed to psychological problems and mental disorders) is characterized by a high level of disintegration of the conscious and the unconscious mind. People with abnormal personalities rely on their conscious mind only, without understanding that they also have an unconscious mind and that they need to consider its reactions when making vital decisions.

Another distinct feature of an abnormal personality is a relatively high degree of one-sidedness in conscious attitudes.

The third characteristic of abnormal personality is closely related to the other two. A result of the one-sidedness of conscious attitudes is activation of the unconscious, which tries to compensate for this one-sidedness. But because people with abnormal personalities do not know anything about their unconscious and do not understand its reactions, it is no wonder that there is no real-life conscious compensation. At this point the activated unconscious begins to interfere with the functioning of the conscious mind and to influence human behavior.

According to Jung, strongly pronounced and resistant conscious attitudes of an abnormal personality may lead to various mental and behavioral disorders. This is how Jung himself described the mechanism of the development of such disorders:

> We find it eminently characteristic of abnormal people that they refuse to recognize the compensating influence which comes from the unconscious and even continue to emphasize their one-sidedness. … The mentally unbalanced person tries to defend himself against his own unconscious, that is to say, he fights against his own compensating influences. … This results in a condition of excitation, which produces a great lack of harmony between the conscious and unconscious tendencies. The pairs of opposites are torn asunder, the resultant division leads to disaster, for the unconscious soon begins to obtrude itself violently upon the conscious processes. Then come odd and incomprehensible thoughts and moods, and often incipient forms of hallucination, which plainly bear the stamp of the internal conflict. (1914, p. 966)

As contrasted with an abnormal personality, a normal personality (nonpredisposed to developing psychological problems and mental disorders) has three characteristic aspects. The first is a high level of integration of the conscious and the unconscious mind. Such integration results in the equal participation of both

structures in the organization of human life. Jung called this phenomenon *Self*. According to his definition:

> The *Self* designates the whole range of psychic phenomena in [humans]. It expresses the unity of the personality as a whole. … Empirically, therefore, the *Self* appears as a play of light and shadow, although conceived as a totality and unity in which the opposites are united (Jung & Baynes, 1921/1976, p. 460).

From Jung's point of view, acquiring the Self should be regarded as a universal human ideal that everyone should try to reach because this ideal conforms to human nature, and rejection of it leads to discord within oneself. Acquiring the Self is possible only with a radical change of the position one takes toward one's unconscious; this change results in admitting that the unconscious exists and that it is an appropriate source of wisdom and experience, which one should rely on. As a result of this changed attitude toward the unconscious, one begins to investigate it, learns to understand its reactions and to appropriately compensate for one-sided conscious attitudes. Such a changed attitude toward one's unconscious, which becomes an ally whose advice should be taken into account, was vividly described by Jung as a shift in the center of personality:

> If we picture the conscious mind, with the ego as its centre, as being opposed to the unconscious, and if we now add to our mental picture the process of assimilating the unconscious, we can think of this assimilation as a kind of approximation of conscious and unconscious, where the centre of the total personality no longer coincides with the ego, but with a point midway between the conscious and the unconscious. This would be the point of new equilibrium, a new centering of the total personality, a virtual centre which, on account of its focal position between conscious and unconscious, ensures for the personality a new and more solid foundation. (1917, 1928/1972, p. 221)

The second characteristic aspect of a normal personality is related to the specificity of its conscious attitudes. Because of the general orientation of a normal personality toward interaction with the unconscious, conscious attitudes already cannot be one-sided, as happens with an abnormal personality. Conscious attitudes of a normal personality combine both opposites, which are present simultaneously, without excluding each other; this combination of opposites is to a great extent congruent with the nature of human life, which is set as a unity of opposites. Such a mentality is unusual for a modern, civilized human. As a result, according to Jung,

> unfortunately our Western mind, lacking all culture in this respect, has never yet devised a concept, nor even a name, for the union of opposites through the middle path, that most fundamental item of inward experience, which could respectably be set against the Chinese concept of Tao" (1917, 1928/1972, p. 205).

Finally, the third aspect of a normal personality is that it is an individuated personality. Exploring the concept of individuation, Jung mentioned that it means, above all, a process of self-healing or self-realization, whose distinct feature is that

one lives for oneself, manages life freely and independently, and takes responsibility for it.

In Jung's opinion, the main block in the individuation process is rooted in oneself, in one's unconscious. A person with a discorded mind and one-sided conscious attitudes — that is, an abnormal personality — inevitably falls under the power of the irrational forces of the unconscious. As a result, the person has thoughts, images, feelings, and actions imposed by the unconscious, and this imposition by the unconscious makes the individuation process impossible. Jung points out:

> [Such an influence from the side of the unconscious creates] a compulsion to be and to act in a way contrary to one's own nature. Accordingly a man can neither be at one with himself nor accept responsibility [for] himself. He feels himself to be in a degrading, unfree, unethical condition. … Deliverance from this condition will come only when he can be and act as he feels is conformable with his true self. … When a man can say of his states and actions, 'As I am, so I act,' he can be at one with himself, even though it be difficult, and he can accept responsibility for himself even though he struggle against it. We must recognize that nothing is more difficult to bear than oneself. … Yet even this most difficult of achievements becomes possible if we can distinguish ourselves from the unconscious contents. (1917, 1928/1972, p. 225)

The intention of a normal personality to communicate and cooperate with its own unconscious results in mastering its influence, which Jung regarded as a necessary condition for undertaking the individuation process.

Results

Based on the comparison of the theories of personality by Jung and Fromm, one may conclude that they have two similar statements.

First, the theory of Jung is based on a fundamental philosophical presumption that characterizes the nature of human life: that life is predetermined as a unity of opposites. As a result, a person constantly faces various contradictive requirements, raised from the opposite sides of reality, that must be fulfilled at the same time. The most common example of a contradiction of this kind is the contradiction between the conscious attitudes of a person and compensating claims from the unconscious, which are the total opposite of these attitudes. Taking such characteristics into account, we may regard these contradictions as existential dichotomies in Fromm's terms and classify them as *dichotomies of opposites*. Because contradictions may appear not only between the opposites but also between any incompatible sides of reality, one may conclude that dichotomies of the opposites form a narrower class of existential dichotomies.

Second, the existential criterion of distinguishing normal and abnormal personality is implicitly present in Jung's theoretical conceptualization of personality, which is, respectively, nonpredisposed and predisposed to developing psychological problems and mental disorders, and is characterized by the same particular features of the content and formation of this position as in Fromm's theory, although in relation to this narrower class of existential dichotomies. Such a position is described in Jung's works as a conscious attitude.

The position of a normal personality in its content (nonpredisposed to developing psychological problems and mental diseases) orients a person toward a contradictious predetermination of life in the form of the existential dichotomy of the opposites. A person with such a position admits the presence of dichotomies of that kind and regards them as the necessary simultaneous realization of opposite requirements, which they contain: above all, those of the conscious and the unconscious mind. Thus, the position of a normal personality is a position of reasonable compromise, which makes it possible to follow, in Jung's words, the middle path, by combining both opposites and, at the end, acquiring the Self. The position of a normal personality is achieved on a rational basis with the active participation of a person in the process of self-cognition — above all, in the cognition of the personal and the collective unconscious.

The position of an abnormal personality (predisposed to developing psychological problems and mental diseases) in its content is one-sided in the sense that one considers it meaningful and important to realize only some aspects of life, those that match one's conscious attitudes, in disregard of the opposites, which one is not conscious of. Unlike Fromm, Jung did not explain directly how the attitude of an abnormal personality is formed, but he, like Fromm, came to the conclusion that an abnormal personality, taking a one-sided position toward objective life conditions, inevitably falls under the sway of the irrational forces of the unconscious, which control human behavior despite one's will and reason.

Conclusion

The existential criterion of normal and abnormal personality based on the works of Fromm is also implicitly present in Jung's theory personality, respectively, nonpredisposed and predisposed to developing various psychological problems and other mental disorders, toward more special *existential dichotomies of opposites*.

The existential criterion in Carl Rogers's theory of personality

Theoretical discussion

The concept of self-actualization has a key position in Carl Rogers's theory of personality. The term *self-actualization* is a composite of two words. According to Rogers, the word *actualization* means a tendency toward growth and development according to innate potential capacities inherent in all of living nature. As an example, we may point to the seed of any plant, which initially has a potential for growth and development and, being placed in appropriate conditions, begins to grow and develop, achieving its potential. The word *self* points to the particular object of actualization: a human personality. Thus self-actualization is the actualization of the innate human tendency to grow and develop according to one's natural potential. As in the case of the seed, the tendency to grow and develop is inherent in human nature as a potential ability, which, in a particular environment, may begin its actual realization.

In Rogers's opinion, psychotherapeutic communication between therapists and clients, typical in client-centered therapy, is one of such kinds an environment characterized by three main specific features. The first is the openness and honesty

of therapists in expressing the thoughts and feelings that occur to them in the process of conversation with the clients; in other words, when therapists say something to their clients, they always express only what they really think and what they really feel. The second specific feature includes both therapists' unconditional positive acceptance of patients as people who have unconditional value and therapists' nonjudgmental attitude toward their clients. The third specific feature is therapists' empathic perception of the inner world of their clients, which involves therapists' ability to feel and understand the subjective experience of their clients just as the clients themselves feel and understand it (therapist congruence).

According to Rogers, clients placed in such an environment start to perceive themselves more positively and in a nonjudgmental way. Rogers regarded such a change of attitude toward oneself as a kind of trigger that initiates the process of self-actualization, transferring it from a potential to an actual state. As a result, a client's personality starts to self-actualize — that is, to grow and develop naturally — in the process of fulfilling its potential, which is inherent in its nature.

Developing a detailed conceptualization of a self-actualizing personality, Rogers pointed to a number of inherent specific features. Here I will discuss only four of them, which can be considered the main features because they are present in all the descriptions of a self-actualizing personality that Rogers gave in different works.

The first feature is openness to experience. This feature is fundamental because it is a prerequisite for the existence of other three. Openness to experience is one's special orientation toward the unprejudiced perception of the objective content of one's conscious experience — above all, of the experience related to representations about the self. It is a natural consequence of unconditional positive regard and unconditional self-attitude, which lead to the elimination of subjectivity and bias in regard to oneself. The result of openness to experience is that representations about the self, which Rogers called the *self* or *self-concept*, become more and more empirically grounded and, as a consequence, increasingly correspond to what a person is in reality.

The second feature is called trust in one's organism, which occurs when one regards one's organism as a reliable source of objective, conscious experience. When solving various kinds of problems, people who have this feature are inclined to listen to themselves, to their own experiences, to have what Rogers called "total organismic sensitivity" (1961/1995, p. 202).

The third feature is internal locus. It indicates that a self-actualizing personality is characterized by self-determination of the objectives of life and of the ways of achieving them. This feature is closely related to the previous one because if people experience trust in their organisms as a reliable source of objective experience, it is natural that they exhibit a disposition to rely on themselves and not on any external influences.

The fourth feature is a wish to exist as a process. A person with this feature wants to stay in a never-ending process of growth and development, which is a self-actualization process. People with self-actualizing personalities are open to experience, trust their organisms and rely on their own experiences when solving problems; these experiences are constantly changing in the process of incessant growth

and development, and thus it is common for such people to be in a state of change and incompleteness rather than in a state of permanence and definiteness.

The concepts of self-actualization and self-actualizing personality in Rogers's theory are closely related to the definition of normal and abnormal personality. The existential criterion for distinguishing these two types is implicitly present in the works of Rogers, as well as in the works of Jung, in his theoretical ideas about personality, which is, respectively, nonpredisposed and predisposed to developing psychological problems of different kinds and to mental disorders.

An abnormal (predisposed to developing life problems of different kinds and to mental disorders) personality in general can be defined as non-self-actualizing — that is, as a personality whose process of self-actualization is blocked and exists only potentially. The main hindrance to the self-actualization process is rooted in humans themselves; this hindrance is a system of so-called *conditional values*, which are conditions of humans regard toward the other people and toward the self (Rogers, 1959). If personal qualities of the others or the self accord these values they deserve of the positive regard, otherwise the regard toward them is negative.

Conditional values begin to form in early infancy on the basis of two needs that are closely related to each other: an inborn need for positive regard from others, especially from significant others, and a derivative need for positive self-regard. Using these needs, adults, parents in particular, may impose conditional values that they consider necessary.

Conditional values were regarded by Rogers not only as the main hindrance to the self-actualization process but also as a fundamental factor in the development of abnormal personality. Rogers refrained from calling an abnormal personality, developed under the influence of conditional values, a personality, saying that the term *mask* is more apt. Comparing such a personality to a mask emphasizes that it is just a cover, made by someone else, that hides a real personality, to the development of which one is predisposed by one's own nature.

Rogers's view of a mask-like abnormal personality is the opposite of his idea of a self-actualizing person. This interpretation can be proved by comparison of the main features of an abnormal personality and the four features of a self-actualizing personality described above.

The first above-mentioned feature of a self-actualizing personality, openness to experience, is a predisposition toward the unprejudiced perception of the objective content of one's conscious experience, including, above all, one's self-concept. An abnormal personality, on the contrary, is characterized by a subjective bias toward the perception of one's own experience. Such a bias manifests itself in the human ability to perceive only that part of one's experience that meets one's positive value self-representations, which are under the influence of conditional values. The other part of one's experience is not perceived at all or is perceived with such distortions that the experience doesn't contradict one's positive value self-representations. The main reasons for the nonperception and distortion of experience are a human need for positive regard from other people and a need for self-regard, which sets one to match the ideal of the conditional values imposed by others.

In general we may illustrate this feature on a model of personality structure by Rogers, shown on Figure 1. One of the intersected circles, self-concept, symbolizes subjective self-representations. Another circle, experience, symbolizes all of one's

objective conscious experience of oneself. The intersection indicates that a part of one's experience is perceived consciously, without any distortions, and corresponds to one's self-representations. At the same time one also has experience, which contradicts these self-representations and is perceived perversely or isn't perceived at all. Such experience symbolically remains outside the intersection.
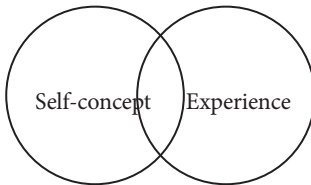

Figure 1. Model of the structure of personality (Rogers, 1959, 1965)

This model helps to illustrate the discussed difference between self-actualizing and abnormal personality, based on the feature openness/bias toward experience, which determines the degree of reality/distortion of self-representations. In the model this reality/distortion degree corresponds to the area of intersection and was called by Rogers the "degree of congruence of self-concept and experience." Full congruence means complete intersection or overlapping of these circles. Such congruence is typical of a fully self-actualizing and opened-to-experience personality, which has absolutely realistic and unbiased self-representations, including contradictious ones.

> [A human opened to experience] is the one who is as aware of the demands of the culture as it is of its own physiological demands for food or sex — which is just as aware of its desire for friendly relationships as it is of its desire to aggrandize itself — which is just as aware of its delicate and sensitive tenderness towards others as it is of its hostilities toward others. (1961/1995, p. 105)

In another place, also describing the same type of experience of a person in the process of self-actualization, Rogers noted:

> He feels loving and tender and considerate and cooperative, as well as hostile, or lustful, or angry. He feels interest and zest and curiosity, as well as laziness or apathy. He feels courageous and venturesome, as well as fearful. His feelings, when he lives closely and acceptingly with their complexity, operate in a constructive harmony rather than sweeping him into some uncontrollably evil path. (1961/1995, p. 177)

On the contrary, complete incongruence indicates the presence of illusionary, fully distorted self-representations, which do not correspond to reality. It is obvious that such cases should be regarded only as theoretical samples, as they scarcely exist in reality.

The second feature of abnormal personality is also the opposite of the previously discussed second feature of a self-actualizing personality. If a self-actualizing personality is characterized by trust in its organism as a source of objective experience, an abnormal personality rather trusts its subjective self-representations,

which are based on conditional values. As a consequence, an abnormal personality faces a mismatch between the contents of the self and experience, and these two structures confront each other. Rogers described objective experience that doesn't match conditional values as an objective danger because it can destroy self-representations and the integrity of the self. Such an objective experience is a source of anxiety, from which a human tries to defend by distorting the objective content of experience.

The third feature of a self-actualizing personality, internal locus, is characterized by self-determination in choosing goals and ways of achieving them. On the contrary, the third feature of an abnormal personality, external locus, is to a large extent driven by conditional values, which are imposed by other people in early childhood in order to change behavior in a way they believe is needed. Such intrusion is based on the human need for the positive regard of other people and for positive self-regard. Despite the fact that, later, these conditional values are perceived by the abnormal personality as its own, we, taking their source into account, may say that its behavior stays in irrational dependence on them as external forces.

The fourth feature of an abnormal personality is that it is inclined to be in a state of permanence and determinacy. It is conditioned by the fact that self-representations of an abnormal personality are based on a relatively stable system of conditional values and not on constantly changing experience, and they also have the ability to actively resist changes toward correspondence with experience by the means of distortion of their objective content.

According to Rogers, a normal personality (not predisposed to developing psychological problems and mental diseases) is typical of a fully functioning person, who is described in his works as a person having the features of a self-actualizing personality, but this description is almost always given not in the absolute, but in relative characteristics, in comparison with an abnormal personality.

Thus, a normal personality is characterized not by openness to experience, but by more openness to experience; not by trust in its organism, but by more trust in its organism; not by internal locus, but by more internal locus; not by a wish to exist as a process, but by a stronger wish to exist as a process; and so on. As an example of such a description we may use an extract from one of Rogers's works, in which he gave a condensed characterization of a normal human personality that has successfully undergone a course of client-centered therapy. In this extract the underlined words indicate a comparison between characteristics of normal and abnormal personalities.

[After successfully performed psychotherapy, the] individual becomes <u>more</u> integrated, <u>more</u> effective. He shows <u>fewer</u> of the characteristics which are usually termed neurotic or psychotic, and <u>more</u> of the characteristics of the healthy, well-functioning person. He changes his perception of himself, becoming <u>more</u> realistic in his views of self. He becomes <u>more</u> like the person he wishes to be. He values himself <u>more</u> highly. He is more self-confident and self-directing. He has a <u>better</u> understanding of himself, becomes <u>more</u> open to his experience, denies or represses <u>less</u> of his experience. He becomes <u>more</u> accepting in his attitudes toward others, seeing others as more similar to himself. In his behavior he shows similar changes. He is <u>less</u> frustrated by stress, and recovers from stress <u>more</u> quickly. He becomes <u>more</u> mature in his everyday behavior

as this is observed by friends. He is <u>less</u> defensive, <u>more</u> adaptive, <u>more</u> able to meet situations creatively. (1961/1995, p. 36)

From my point of view, such a comparative description is not a coincidence. It is related to the fact that, as was discussed previously, besides an inherent tendency to self-actualization, a human has an inherent need for the positive regard of other people, which is often satisfied only on condition of matching the qualities of his personality to the conditional values shared by significant others.

Results

Based on this comparison between the theories of personality by Carl Rogers and Fromm, we may conclude that they are similar in two ways.

First, in Rogers's theory this statement has great importance: there is a contradiction between two different directions of personal development in human life; this contradiction makes a human have a need for self-determination related to his development. One of these directions is set by an inherent human tendency to self-actualization; another, by a human striving after conformity of personal qualities to the conditional values imposed by others. Such a contradiction can be regarded as inherent to human nature because the self-actualization tendency is innate, and human striving after conformity of personal qualities to conditional values is a necessary condition of satisfaction another inherent need, the need for positive regard from significant others. The listed characteristics of this contradiction allow us to classify it according to Fromm as an existential dichotomy and to name it *a dichotomy of self-actualization and conditional values*.

Second, the existential criterion of distinguishing normal and abnormal personality implicitly present in Carl Rogers' theoretical conceptualization of personality, respectively, non-predisposed and predisposed to developing psychological problems and mental disorders, and is characterized by the same particular features of the content and formation of this position as in Fromm's theory, although in relation to this more particular existential dichotomy.

The position of a normal personality (nonpredisposed to developing psychological problems and mental diseases) in its content orients one toward a contradictious predetermination of life in the form of an existential dichotomy of self-actualization and conditional values. A person with such a personality is aware of this contradiction and finds a way of resolving it through compromise and thus becomes a fully functioning human without losing the aim of achieving conformity of personal qualities and the conditional values of other people, which is necessary for social adaptation. Such a position is developed with one's active participation on a rational basis within the process of self-cognition — above all, cognition of one's own experience, perversely realized and unconscious.

The position of an abnormal personality (predisposed to developing psychological problems and mental diseases) in its content one-sidedly orients a human toward achieving conformity of personal qualities to the conditional values of other people, which inhibits realization of the self-actualization tendency in life. Such a position is imposed in early infancy by other people — above all, by parents — on an irrational basis — on the basis of a need for positive regard from other people and positive self-regard.

Conclusion

The existential criterion of normal and abnormal personality based on the works of Fromm is also implicitly present in Rogers's theory of personality as being, respectively, nonpredisposed and predisposed to developing various psychological problems and other mental disorders. Rogers's theory, however, is based on the special case of *an existential dichotomy of self-actualization and conditional values*.

Application of the results

I have shown in a number of empirical studies (Kapustin, 2014, 2015c, 2015d, 2015e) that the key factor leading to child-parent problems in families of psychological-consultation clients is the abnormality of the parents' personality, identified through a so-called existential criterion that is displayed in their parenting styles. These parenting styles contribute to the formation of children with abnormal personality types, also identified through existential criteria, that are designated as "oriented on external help," "oriented on compliance of one's own behavior with other people's requirements," and "oriented on protest against compliance of one's own behavior with other people's requirements." Children with such personality types are faced with requirements from their closest social environment that are appropriate for children with normal personality development but are not appropriate for those with abnormal personal abilities, and so they start having problems. As these problems are connected with troubles of adjustment to social-environment requirements, they can be classified as problems of social adaptation. I have identified a similarity between the personality type "oriented on compliance of one's own behavior with other people's requirements" and theoretical concepts in the work of Fromm, Freud, Adler, Jung, Rogers, and Frankl about the predisposition of people with an abnormal personality to having various psychological problems and mental disorders. These similarities suggest that a personality of this type can be regarded as a classic type that all these authors faced in their psychotherapeutic practice at different times. It was shown, that abnormal personality types, formed in childhood, influenced the formation of large amount of personal problems in adulthood (Kapustin, 2016).

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Adaptation of instruments developed to study the effectiveness of psychotherapeutic processes

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The objective of the research was to adapt for use in Russian-language contexts a set of instruments that assess the effectiveness of psychotherapeutic practices. The instruments explore the effectiveness of different types of therapy, without evaluating the abstract, idealized characteristics or specifics of each approach, specialist, or therapeutic case. The adapted instruments are based on reflective data about the significance of therapeutic events, from the point of view of both the client and the therapist. We translated, edited, and adapted forms developed by John McLeod and Mick Cooper — a "Goals Form", a "Goal Assessment Form", a "Post-Session Form", and a "Therapy Personalization Form". The adaption was intended to cohere with the stylistic and cultural aspects of the Russian language. The research showed that the instruments and the methods have great potential for practical and theoretical application in qualitative studies to formulate hypotheses and to verify them in quantitative studies. The phenomenological analysis reveals the reliability, appropriateness, and validity of the adapted instruments for identifying specific meanings of the psychotherapeutic cases considered. The instruments can be used in studies exploring helpful aspects and effectiveness in different types of therapy (cognitive, existential, outdoor therapy, online counseling, etc.) with different groups of clients. It is reasonable to continue the use of the Russian-language version of the instruments in further studies exploring the effectiveness of psychological practices. The adapted instruments facilitate comparison and cross-cultural studies, and formulation of meaningful hypotheses about the effectiveness and quality of the psychotherapeutic process.

Keywords: reflection, relationality, relation, effectiveness, self-assessment, procedurality, psychological help, significant events

Introduction

Currently in psychological science there is a need for models and instruments to measure and demonstrate the effectiveness of psychological interventions. Not only are there evidence-based schools of psychotherapy, but also naïve and eclectic "schools" which irresponsibly proclaim the effectiveness of their approaches. An

important issue is also the "schoolism" of therapists who are more concerned with asserting the success of their particular school than with helping clients.

In our research, we adapted and applied instruments developed by John McLeod and Mick Cooper, based on the principle of assessments of significant events, to demonstrate the effectiveness of therapeutic practices. McLeod and Cooper pioneered a pluralistic approach to therapy, and their findings are presented in a number of articles and books (e.g., Cooper & McLeod, 2011). The data we collected indicates how therapeutic practices were subjectively evaluated by different participants (e.g., by a client and a therapist). Then their assessments were compared, and on the basis of qualitative and quantitative correlations, we developed "process maps" (Cooper, 2004; Cooper & McLeod, 2011; Watson et al., 2012), showing the direction and the range of efficiency and potential of therapeutic activities. There have been no previous studies of this kind in Russia.

Methods

Adaptation of the Russian versions of the instruments was carried out in three stages. After receiving consent from J. McLeod and M. Cooper, we obtained their initial data and several translations were made and reviewed by psychologists fluent in Russian and English. Based on the expert reviews, the wordings were chosen that most accurately expressed the essence of each statement on the forms. The experts were professors at Tomsk State University and practicing psychologists working in the city of Tomsk.

In the second stage, we studied the use of the adapted instruments with a sample of 40 individuals undergoing psychotherapy (existential group psychotherapy, individual therapy, and art therapy). Men and women aged 18 to 50 participated in the research.

In the third stage, we interviewed the participants and therapists who had filled out the forms (the instruments). The purpose of the interviews was to determine whether the process of filling out the forms was useful, and whether the statements on the forms were clear or needed revision. We also requested and gathered suggestions for improvements of the instruments.

As required by the ethics of psychological research, all participants and clients provided their informed consent.

The instruments were intended to gather and to analyze qualitative data, to reveal meanings of events, and to understand relations between therapeutic activities. The reliability of the data and the appropriateness of the instruments are determined by the extent to which they allow us to clarify what is helpful in psychotherapy.

Description of the instruments

The set of instruments developed within a pluralistic approach (Cooper & McLeod, 2011) facilitates not only study of the specific structure of the therapeutic process, but also of the dynamic process of the therapy; evaluation of the effectiveness of the methods (and, indirectly, of the therapeutic approach); verification of hypotheses about the activities of the client and therapist; and formulation of new hypotheses.

We used the following instruments: "Goals Form", "Goals Assessment Form", "Post-Session Form", and "Therapy Personalization Form".

Goals Form, Goals Assessment Form

In the pluralistic approach within which the instruments have been developed, the basic starting point in therapy is the client's goals. There is good evidence that people are more productive when they work towards specific, and relatively challenging, goals (Locke & Latham, 2002). Goals can be defined — the changes that the client intends to achieve — and they can be represented in a hierarchy, ranging from a quest for the higher meaning of life to the most specific, situational goals. Clients may have multiple, discrete goals for therapy, often involving interpersonal relations or specific problems and symptoms. In the pluralistic approach, it is especially important to encourage clients to discuss and clarify what they expect from therapy in the early stages of the process. To do this, clients fill in the "Goals Form", identifying two or three issues/goals/problems for which they are seeking help. Then, on a scale from 0 to 9, the client indicates: "how much this issue bothers him at the moment (over the last week)"; "how important this issue/goal/problem is for him in relation to his life as a whole"; and "how much progress he expects to make on this issue during therapy".

In the process of therapy, clients are invited to assess their goals using the "Goals Assessment Form", which helps to evaluate the effectiveness of the work, to review issues/goals/problems, and to formulate new, more urgent goals. Here the client specifies the issues/goals/problems for therapy and assesses their level of achievement on a scale from 0 to 7. In our studies, goal assessment was carried out in the middle of therapy (intermediate evaluation) and at the end of therapy (final evaluation).

Our research shows that the "Goals Form" and "Goals Assessment Form" make it possible to evaluate not only the general meaning of the goals, but also the intensity of the stated issues/goals/problems; the urgency of the problems; and the level of expectation of results.

Due to the identification and evaluation of their goals, the clients better recognize and understand their emotions and psychological processes, and feel more confident and able to make decisions. The very task of writing down (stating) one's goals for therapy is therapeutic and encourages the client to better understand himself in psychotherapy, his problems and the situations he confronts.

Identification of goals for therapy and goals assessments during therapy provide abundant material for new hypotheses about the effectiveness and the therapeutic alliance between the client and therapist. To exemplify this, we present a comparative analysis of the use of these instruments in existential group therapy. We used the "Goals Form" and "Goals Assessment Form". More detailed information is presented in Lukyanov & Shushanikova (2015).

To develop process maps, we used the clients' reflexive reports. A phenomenological interpretation of the texts was conducted using the A. Giorgi method (1997) (interpretation of a single text). The procedure identifies "meaning units" by breaking down participants' statements into small chunks expressing a single meaning. These "meaning units" were assigned a label to allow organization of the data set.

Labels remained as close to the participants' actual words as possible. All the texts that have the same meaning form small chunks expressing a single meaning. The "meaning units" are then interpreted (put into acceptable professional language), which results in formulation of a brief phenomenological description (understanding) of the reflected process. The topics and meanings that occurred sporadically were combined with others, if possible, as was recommended by Hill, Thomson, and Williams (1997).

Therapy Personalization Form

From a pluralistic standpoint, the choice of the method for therapy is especially important, as it may have therapeutic value for the client. The authors of this approach, along with some other researchers (e.g., Maria Bowens) suggest using the "Therapy Personalization Form" to refine and clarify with the client whether the applied therapeutic method matches the client's needs. The form consists of 20 scales in which clients indicate what changes they would like to see in their therapy, on a scale from 0 ("Just right for me") to 5. This form allows the therapist to adjust the process of therapy and make it as effective as possible and in compliance with client's individual preferences and needs.

In our study, we explored the effectiveness of existential therapy. Analysis of the "Therapy Personalization Forms" showed that clients' preferences for therapy generally corresponded with the approach of their therapists.

In some cases (mainly in individual therapy), clients noted that there were no scales on the form describing the methods of art therapy or therapy of creative self-expression. Therefore, we consider it reasonable to add these scales to the form.

Our study showed that the "Therapy Personalization Form" was more effective in individual psychotherapy, where the therapist and client together could adjust the process and choose methods based on the client's feedback about *helpful therapeutic effects* and *helpful activities*.

Post-Session Form (PSF)

The PSF was developed by Cooper and McLeod as a tool for gathering information about significant events that benefit therapy and contribute to therapeutic changes.

Significant events research has its origins in studies of group therapy (Bloch & Reibstein, 1980) and in the research into helpful events in individual therapy conducted by Elliott (1984, 1985). Timulak (2010) carried out a meta-analysis of key themes in client and therapist accounts of helpful events in psychotherapy, using clients' and therapists' reflexive reports. He found that client reports focused on contributions to the trusted therapeutic relationship (e.g., reassurance, feeling understood, and personal contact) and to in-session outcomes (e.g., insight, relief, behavioral change, new feelings, and empowerment), that is, on events which help clients to "understand" the problem. Timulak (2010) also found that perspectives on what is significant in therapy differ between clients and therapists, and that significant events seem to be therapeutically productive.

In many of the studies reviewed and conducted by Timulak (2010), the Helpful Aspects of Therapy (HAT) form (Elliott, 1993; Llewelyn, 1988) was used to collect client and therapist accounts of significant events. This form invites the client or

therapist to describe one or more helpful and/or hindering event that occurred during the most recent therapy sessions in which he or she took part. The pluralistic framework for therapy developed by Cooper and McLeod (2011) suggests improving the method for analyses by distinguishing among *helpful client activities, helpful therapist activities,* and *helpful therapeutic effects*. The aim of this distinction is to distinguish between the meanings of therapist and client activity and to develop a more nuanced understanding of the multiple pathways through which therapeutic change can come about, and also to create a framework in which the client's contribution to change (Bohart & Tallman, 1999) can be brought to the fore. The HAT makes use of relevant elements of the Brief Structured Recall interview guide (Elliott & Shapiro, 1988) in a self-report format.

The original "Post-Session Form" consists of two parts. In the first part (rating), the participants are asked to assess the session (or the therapeutic day, as in some of our cases) by answering four questions: 1) *How helpful or hindering to you was this session overall?* 2) *How do you feel about the session you have just completed?* 3) *How much progress do you feel you made in dealing with your problems in this session?* 4) *To what extent can you say about yourself, "In this session something shifted for me. I saw something differently or experienced something in a new way"?* The clients needed to answer with one of the choices offered.

The second, main part of the form (reflexive reports) asks clients to describe their actions during the therapy process: 1) two or three examples of helpful actions by the client "*Please write down something that you did in this session that felt particularly helpful to you?*" 2) two or three examples of therapist activities: "*Please write down what your therapist did, if anything, that helped you to do this*"; 3) and then to describe the therapy process: "*Please write down why you felt that this activity was helpful — what did it achieve*" (helpful effects). Then the clients are requested to describe a second and third example of helpful effects, helpful client activities, and helpful therapist activities. In the final part of the form, the clients are welcome to write down something that happened in the session that felt unhelpful and to suggest ways in which this session could have been more helpful.

According to our research, filling in this form was especially meaningful to the clients because it allowed them to reflect on each session about their personal commitment and involvement in the process, as well as the involvement and effectiveness of the therapist. In response to participants' feedback (both clients' and specialists') about the research and the "Post-Session Form", we added a section for reflexive reports about the most vivid (positive or negative) experiences during the therapy session, thoughts, notes, comments, questions, topics for further discussions. We also added a section for self-efficacy assessments in therapy, which consists of four scales: sincerity, honesty, effectiveness, and involvement, where clients are invited to give themselves an excellent, good, fair, or poor grade.

Thus, the final version of the adapted instrument consists of four parts: 1) evaluation of the therapy session as a whole; 2) examples of useful client activities, therapist activities, helpful effects, hindering effects, and desired effects/actions; 3) reflexive reports, comments, and ideas about the therapy; 4) evaluation of self-efficacy.

Comparison of the results of two cases of therapy performed according to two different therapeutic approaches, using "Post-Session Forms", indicates that in both cases the instrument allows the researcher to obtain qualitative data accurately re-

flecting the dynamics of the therapy and its effectiveness, due to clients' reports about significant events. Table 1 shows the clients' core meaningful themes and examples of helpful effects in the therapy, revealed during PSF processing by the phenomenological method. The table shows two cases of existential group psychotherapy.

In Case 1, due to the specificity of existential group therapy, helpful effects were formulated in the context of mental and emotional recovery and coping with challenges. In Case 2, "psychological travel" — meaning psychological renewal, broadening of one's horizons (discovery of new landscapes), harmonization with nature, and intensification of creative living — came to the fore.

Table 1. Core meaningful themes and descriptions of helpful therapeutic effects.

Cases	Most frequent correlations and descriptions			
	Helpful therapeutic effects	Description and examples of clients' responses	No. of participants who mentioned this effect	Percentage of total participants
Case 1. Existential group therapy ("Intensive Therapeutic Life", as conducted by Dr. A.A. Alekseichik)	1. Authentic / genuine living of life;	As a helpful effect, clients mentioned their authentic and genuine experience during the group. This implies being active, responsible, accepting, honest, etc.; *The life was genuine, with no pretentions and illusions; I couldn't live a miserable life in the group.*	8	42.1
	2. Gaining new resourceful experience and more holistic / complete understanding (of the situation/ process/ challenges in life and myself in them);	Clients expressed the view that in the group therapy they gained new experiences, which was very helpful and gave them new resources: *I focused on other people's feelings, which I hadn't done for a long time; I started to consider questions about the simplicity of life and gratitude.*	14	52.6
	3. Humility, determination, willingness to change;	Becoming more humble helped the clients to accept some events as being outside their control and to understand those things in life they can change: *I became more humble and it was wonderful; I feel I can change some things.*	6	31.5
	4. Considerate attitude in words and actions;	Being actively involved in the life of the group helped the client to be more attentive to what they and other participants say and do, because their words and actions have effects on others (positive or negative): *I understood I could not ignore him anymore.*	6	31.5

Case 1. Existential group therapy ("Intensive Therapeutic Life", as conducted by Dr. A.A. Alekseichik)	5. Understanding of oneself and others;	The therapy process allowed the clients to meet their true selves, which helped them to understand others as well: *I understood myself better; I can understand people better now.*	7	36.8
	6. A sense of the reality of life;	The therapy process intensified reality, the present moment, encouraged clients to act and change at that very moment: *What helped me is that feeling of the reality of life; Everything was real — me, my actions, and my words.*	5	26.3
	7. Belief in possible change;	The therapy allowed the clients to gain hope for and belief in possible change in life; change seemed to be more achievable: *I hope I can change things in my life; I gained hope for change.*	8	42.1
	8. Changes in relation to problems;	During the therapy many different problems described by clients concerning relationships, feelings, etc., were gradually losing their force; they were not as dramatic as they were to begin with: *My problems seem to be so insignificant now; now I can stop talking about my problems and can open myself for new experiences.*	7	36.8
Case 2. "Psycho-logical travel" group (including existential group therapy, art therapy, and landscape therapy)	1. Psychological renewal, rest, feeling of being filled with life;	The therapy led to psychological renewal, helped clients to have a very refreshing rest and to gain a feeling of being filled with life: *I see life in a new way; I am filled with joy and energy.*	11	84.6
	2. Exploration of individuality and creativity;	The therapy process involved lots of activities to reveal one's creative potential as fully as possible. Clients experienced those activities as very helpful: *I was impressed with how talented I am; I started to paint and it was so beautiful and easy.*	8	61.5
	3. Satisfaction, enjoyment, inspiration;	"Psychological travel" brings new experiences and inspires people to make their lives more exciting and creative: *The helpful effects for me are: inspiration, strength, joy.*	5	38.5

Case 2. "Psycho-logical travel" group (including existential group therapy, art therapy, and landscape therapy)	4. Being with other people, mutual support, participation, care, attention;	In their "travel", clients could interact with each other and with the therapists as much as they wanted: *I always had a feeling of support and care from other members and the therapists; it was very helpful to be with other people who share my ideas and beliefs.*	10	76.9
	5. Understanding of oneself in space (landscape, nature);	Landscape therapy implies understanding of oneself in a particular area, which a person can find some connection to, gain some good feeling from etc.: *I understood that that whole area was my home for those days; I have a better connection with nature now.*	9	69.2
	6. Personal activity and going forward;	The therapy encourages clients to be involved in all the processes and activities, which gives them a helpful and resourceful feeling of going forward: *My activity didn't take energy from me but gave it to me; I was tired, but absolutely happy that I didn't stop and kept doing it.*	10	76.9
	7. Joy of communing with nature and the members of the group;	Clients reported the joy they experienced as being very helpful and favored therapeutic changes: *What was very helpful is that I enjoyed being there with those people; pleasure from being with nature and good people.*	12	92.3

Discussion

Using reflexive forms and developing process maps were mainly aimed at improving the style of therapeutic work. However, as our results show, in systematic studies, qualitative data obtained by using these instruments (forms) may contribute to describing psychotherapy as a living space in the modes of relations and psychotherapy as a process of forming specific relations (relationality).

Our adaptation and modification of the instruments, relying on the results of our foreign colleagues' research, showed the instruments to be beneficial for monitoring the effectiveness of psychological assistance; for giving responsibility both to professionals who are offering assistance and to clients who are relying on it; and also for studying the effectiveness of therapeutic methods (approaches).

The reliability of the instruments is shown by the fact that the information gained allows us to formulate more precise and clear hypotheses. Reflection about identifying goals for therapy and goals assessments provides therapists with abundant material for forming new hypotheses about the therapeutic alliance. The interpretations of the data obtained using the "Goals Form" and "Goals Assessment

Form" may be diverse. For example, data about the fact that clients change their goals might be understood as an indication that they are becoming more psychologically healthy, showing the ability to "evolve" as a result of psychotherapy. At the same time a client's prolonged focus on the same goals might show the development of relations in therapy, such as enhancing the therapeutic alliance, or building trust in the therapeutic approach or goals of the approach.

Most of the hypotheses generated by analysis of the reflexive data, of course, refer to the process of therapy itself and have practical value for the therapeutic process. In the more systematic approach towards research of this type, more detailed phenomenological interpretation of the results and comparative analysis may lead to the formulation of theoretical hypotheses as well. The study of relations and meanings of emerging therapeutic relations (relationality) against the background of various therapeutic approaches, the forms of work of different therapists, etc., allows us to present psychotherapy not only as a form of the therapist's self-expression, neither in the form of models reducing life to techniques or mechanisms, nor in a theoretical concept, but rather a full life, including consistent approaches as well as assumptions of situational decisions. Hopefully this will also make it possible to overcome the struggle for assertion by therapists of their own approach to the detriment of the development and fullness of therapeutic reality; to overcome the antinomy between subjectivism and objectivism that currently exists on the basis of relativism, and that in the future will be based on pluralism and ever more intense and vivid discourses and approaches.

Reflexive forms allow us to study and better understand not only therapists' relational qualities (Watson et al., 2012; Lukyanov & Shushanikova, 2015), but also clients' relational qualities.

By registering helpful activities as well as noticing favorable therapeutic effects, clients recognize and understand their emotions and psychological processes better; they feel more confident, able to influence the course of events and to take responsibility for what is happening, and they are also better able to make decisions. This gives them energy, determination, and a sense of genuine presence and belonging. The very task of formulating and writing down activities and the effects to which they lead is therapeutic and promotes a better understanding of what is happening, and the client's involvement in the process. As the relationship between the therapist and the clients strengthens, therapy becomes richer mentally and emotionally and shows multiple variations depending on the situational content. This contributes to a full involvement of clients in life of the group and in their own lives, as they become psychologically closer (forming bonds), and it increases their potential for "renewal" and "recovery".

Conclusion

The study of client and therapist activities and helpful effects in the process of therapy is significant for further research because it reveals client activity, authenticity, responsibility, self-development, and involvement in the process of therapy that enforce the therapeutic effect. Involvement of clients in the therapeutic process can also show that changes can occur through a variety of therapeutic methods and

therapist actions identified by clients as most helpful, but in some cases they might not be consistent with the therapist's initial assumptions, and can also encourage the search for other therapeutic pathways.

Limitations

The key limitation of this study is the generalization of its findings, given the small sample. Another limitation is the small group of experts who reviewing the effectiveness of the adapted instruments.

With the use of process maps, we could visually illustrate many processes of change in clients. Therapists can use these visual tools to improve the process of therapy. However, the main problematic aspect in developing process maps is the low frequency of some combinations of responses. In Case 1, the number of responses received during three therapeutic days is different, since not all the participants filled out the forms every day. Clients did not always describe helpful therapeutic effects, but always described helpful activities (both by the client and therapist). We assume that clients could not describe/identify/name the effects, or were not aware of them.

Further research could add to demonstrating the effectiveness of the adapted instruments and give a more thorough understanding and hopefully an explanation of the effectiveness of different types of therapy.

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Self-transcendence facilitates meaning-making and flow: Evidence from a pilot experimental study

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We review the psychological theory of flow and focus on the notion of the autotelic personality, arguing that self-transcendence (understood within the existential tradition of Frankl and Längle as the individual's ability to establish inner relationships with values) can be viewed as a personality disposition conducive to flow experience. The study aimed to investigate the effects of situational task meaning and dispositional self-transcendence on productivity and flow experience. We present a pilot quasi-experimental study conducted in a student sample (N = 82) Students were asked to work in small-group settings on a creative task, which consisted in finding solutions to a social problem. Each group was randomly assigned to an instruction presenting the problem as happening either in a distant country (low-meaning) or in their home country (high-meaning condition). The outcome variables were measures of flow, perceived meaning of the task, and satisfaction with time spent working. The solutions generated by the students were rated by three experts. The experimental manipulation had a main effect on the quality of the resulting solutions, but not on the subjective experience of the participants. A number of significant interaction effects were found, indicating that the associations of self-transcendence with experiential outcomes tended to be linear under the low-meaning condition, but curvilinear under the high-meaning condition. The findings suggest that self-transcendence is particularly beneficial to flow in situations with unclear meaning, but very high levels of self-transcendence may hinder flow in highly meaningful situations. Overall, the findings suggest that self-transcendence can be considered as a disposition of the autotelic personality.

Keywords: flow experience, self-transcendence, personal meaning, autotelic personality

Introduction

The concept of flow

Engagement with the world is the essence of human life. By engaging we become motivated, experience meaning, exercise our strengths, and achieve personal growth. Among theories describing optimal experiences of engagement, the flow theory has generated the most research attention. Csikszentmihalyi (1990) describes flow as the experience associated with an autotelic (intrinsically enjoyable, self-rewarding) activity characterized by intense and effortless concentration on the task at hand, merging of action and awareness, a sense of control, loss of self-consciousness, altered sense of time, and continuous enjoyment. Flow experiences have been studied in the context of various everyday activities, including work, study, sports and active leisure (rock climbing, sailing), listening to or performing music, dancing, sex, creative writing, and even household chores, like ironing clothes or driving a car (Nakamura & Csikszentmihalyi, 2000).

Empirical studies of flow states began by using qualitative interviews. Later on, various structured paper-and-pencil questionnaire measures were developed, including the Experience Sampling Method (ESM), which made it possible to study flow experiences in the context of everyday flow activities (for reviews, see Nakamura & Csikszentmihalyi, 2000; Delle Fave, 2014). More recently, researchers have begun to use experimental flow-inducing interventions. Summarizing the results of these studies, Moller, Meier, and Wall (2010) review contextual factors that have been shown to be conducive to flow experience in experimental studies. They note that a balance between challenges and skills, even though efficient in inducing flow, may not be a sufficient condition for flow. Among other factors that contribute to creating a flow experience are *task instrumentality* (extrinsic utility), which facilitates flow even under a suboptimal balance of challenges and skills; *clarity of goals* and feedback; *autonomy support* at the context level; and *minimization of distraction*. Minimization of distraction involves removing any stimuli that increase reflective self-awareness, which includes other people and the experimenter (Moller, Meier, & Wall, 2010). However, the flow-inducing activity itself may involve interpersonal interaction. Walker (2010) has shown that social flow, particularly in highly interdependent teams, is more enjoyable to participants than is flow in solitary or non-interdependent social settings.

Because flow is an emergent phenomenon of person-environment interaction, its level is dependent not only on situational variables, but also on personality characteristics. The latter have, until very recently, received comparatively little research attention.

The autotelic personality

From its beginning, flow theory and research have focused mostly on the phenomenology of flow. Csikszentmihalyi and colleagues found that although "the capacity to experience flow appears to be nearly universal," people exhibit a large degree of individual differences both in the frequency and the quality of flow they tend to report in the same situations (Nakamura & Csikszentmihalyi, 2000, p. 93).

In order to explain these differences, Csikszentmihalyi introduced the concept of the *autotelic personality,* originally defined as a person "who generally does things

for their own sake, rather than in order to achieve some later external goal" (Csikszentmihalyi, 1997, p. 117). Later he suggested that this type of personality is characterized by metaskills, or "competencies that enable the individual to enter flow and stay in it," including "a general curiosity and interest in life, persistence, and low self-centeredness" (Nakamura & Csikszentmihalyi, 2000, p. 93). These characteristics facilitate *emergent motivation*, which arises in the process of dynamic interaction between the person and the environment.

Initially, autotelic personality was operationalized using ESM data as time spent in flow or as subjective preference for high-challenge, high-skill situations; attempts to operationalize it using a combination of existing measures of personality traits that reflect receptivity and achievement orientation have also been made (Nakamura & Csikszentmihalyi, 2000).

More recent studies focus on personality traits that moderate the associations between the objective features of situations and the resulting flow experience (for reviews, see Moller, Meier, & Wall, 2010; Delle Fave, 2014). Abuhamdeh and Csikszentmihalyi (2009) found that high *intrinsic motivation orientation* (IMO) was associated with higher enjoyment of high-challenge games in chess players. They also found that the association between challenge and enjoyment was curvilinear in individuals with high IMO, but linear in those with low IMO.

Among other personality dispositions associated with higher flow are achievement motivation (Eisenberger et al., 2005; Engeser & Rheinberg, 2008), internal locus of control (Keller & Blomann, 2008), action orientation (Keller & Bless, 2008), self-efficacy (Bassi, Steca, Delle Fave, & Caprara, 2007), optimism, self-esteem, and extraversion (Schmidt, Shernoff, & Csikszentmihalyi, 2007). These dispositions promote flow either by facilitating sustained task engagement (action orientation) or by making a person more sensitive to the challenge/skill balance (achievement motivation, internal locus of control).

Though a number of trait-level moderators of flow have been found, more research into individual differences in flow quality and flow proneness is needed to create a consistent theoretical model of the autotelic personality.

Self-transcendence: Definitions and measures

One personality disposition that seems to be particularly relevant to flow research is self-transcendence. This concept was introduced in existential psychology, first and foremost, by Frankl (1966). He understood self-transcendence as "a constitutive characteristic of being human that always points, and is directed, to something other than itself…. Actually, being human profoundly means to be open to the world, a world, that is, which is replete with other beings to encounter and with meanings to fulfill" (Frankl, 1966, p. 97).

For Frankl, self-transcendence involves being motivated by meaning, which can only be found, experienced, or created in the process of interaction with the world. Similar to the perception of a gestalt, the perception of meaning "boils down to becoming aware of a possibility against the background of reality … becoming aware of *what can be done* about a given situation" (Frankl, 1992, p. 145). This cognitive restructuring of a situation happens due to the activity of conscience, which evaluates each situation in the light of our hierarchy of values that are not conscious

constructs, but rather are inherent in human nature. However, the perception of the possibility of meaning is only a first step towards creating meaning in life, which emerges as a result of active doing, experiencing, or position-taking.

In a similar vein, May used the term "self-transcendence" to refer to the capacity to transcend the immediate situation "and to assess and guide one's self by an infinite variety of possibilities" (May, 1958, p. 74). The capacity for self-transcendence, for May, is part of the ontological nature of being human and is the basis for human freedom. Both Frankl and May emphasize the ontological rather than the psychological aspect of self-transcendence, seeing it as a property of human existence, rather than an individual difference construct. In contrast, Maslow introduced the concept of self-transcendence in his later theory of metamotivation, or growth motivation (Maslow, 1971). He suggested that self-actualization culminates in seeking to further some cause beyond the self and in being motivated by universal values (meta-needs), providing a basis for viewing self-transcendence as a disposition.

This early theorizing led to adoption of the construct of self-transcendence in empirical research that aimed to measure differences in the extent to which individuals exercise this capacity in everyday situations. Within the context of Frankl's theory, Längle and colleagues (2003) operationalized Längle's model of existential dialogue with the world, which involves four steps: self-distancing or self-detachment (directing oneself towards the world in order to see the possibilities), self-transcendence (perceiving the value of each possibility), freedom (making a decision in favor of a possibility), and responsibility (carrying out this decision). In this model, self-transcendence is seen a step when "the subject gets to understand the qualitative relationships between the objects and him/herself. A hierarchy of the more valuable goals (contents, possibilities) is developed. This is based on the recognition of one's emotional and evaluative reaction to perceived and imagined objects" (Längle et al., 2003, p. 138). Thus, self-transcendence is seen as a cognitive integrative process, which, however, is not focused on the self or on emotional reactions, but on the situation in its relationship to the self, which is being clarified and experienced. Längle and colleagues (Längle, Orgler, & Kundi, 2003) developed a 46-item instrument, the Existence Scale, measuring self-distancing, self-transcendence, freedom, and responsibility as dispositions, or "personal competencies for existence" (p. 158). The scales showed satisfactory internal consistency and retest stability. Predictably, they were positively associated with meaning, negatively associated with depression and neuroticism, and unrelated to extraversion.

Other empirical approaches to self-transcendence include Cloninger's psychobiological model of personality (Cloninger, 1987), which defines character traits as individual differences in self-object relationships, including self-transcendence. The operationalization of self-transcendence in the Temperament and Character Inventory (Cloninger, 1987) is comprised of three facets: 1) self-forgetful vs. self-conscious experience; 2) transpersonal identification vs. self-differentiation; 3) spiritual acceptance vs. rational materialism. Within nursing theory, Reed (1991) defined self-transcendence as the ability to expand the boundaries of the self and to experience intrapersonal, interpersonal, and transpersonal connectedness. Measures of self-transcendence understood as a shift of focus from centeredness on self and material interests towards a cosmic and transcendent view of life were developed within gerontology (see Garcia-Romeu [2010]).

Self-transcendence and flow: Meaning as a link

From these different conceptualizations of self-transcendence, Längle's approach seems to be particularly relevant to flow research, because it describes self-transcendence as an individual disposition for cognitive activity that clarifies the relationship between the world (in a given situation) and the self, forming a basis for emergent motivation. In Frankl's (1992) theory, like other existential approaches, meaning is understood as a perceived possible relationship with the world, a direction which motivates the individual to act. However, in order for an experience of a meaningful life (existential fulfilment) to emerge, action guided by meaning is essential.

This interactionistic approach to meaning becomes a challenge for empirical psychology (Leontiev, 2013), where meaning is often construed within an isolated-subject paradigm, in terms of subjective experience. However, we deem this view of meaning too simplistic, because ignoring the context of relationships with the world (and oneself) that form the essence of meaning makes it impossible to study the role of situational context and personality activity in the emergence of meaning and its motivating power. Following Leontiev (2013), we call for a multifaceted theoretical view of meaning.

In Csikszentmihalyi's flow theory, meaning is also defined phenomenologically, in terms of subjective experience related to a certain activity or object. However, Csikszentmihalyi and Nakamura emphasize the emergent nature of meaning: "as a person is drawn onward by enjoyable interaction with an object, the meaning of the relationship gradually deepens" (Csikszentmihalyi & Nakamura, 2003, p. 95). They associate this phenomenon with a specific form of subjective meaning, "the felt significance of an enjoyed relationship to a domain" (p. 98). In order for a flow activity to become a "vital engagement" (the basis of a lifetime career, a calling), the activity needs to be meaningful, and its meaning for an individual is enriched by a community of people who practice it (Csikszentmihalyi & Nakamura, 2003).

Frankl (1992) emphasizes that pleasure is only a byproduct of the pursuit of meaning, rather than its motivating power, and fulfilling life is achieved by following the direction of meaning, even if this process involves effort and suffering. Csikszentmihalyi & Nakamura (2003) believe that lifetime engagement is fostered by a coincidence of enjoyment and meaning in the same flow activity, which, even though it takes effort, is experienced as effortless. Frankl's view, however, does not conflict with that of flow theory, given the different historical context of these two theories: "meaning is available in spite of — nay, even through — suffering, provided … that the suffering is unavoidable. If it is avoidable, the meaningful thing to do is to remove its cause" (Frankl, 1992, p. 148).

A more general understanding of meaning as context-relatedness, proposed by Leontiev (2013), is helpful to understand why an activity becomes meaningful: "the meaning of action is derived from its goal, the meaning of goal from its motivation, the meaning of motive from life at large, the meaning of life from some sources that embrace our life as a subordinate element" (p. 466). In light of this understanding, the positive effect of task instrumentality on flow discovered by Engeser and Rheinberg (2008) can be seen as the effect of meaning that the flow activity gains within a larger context of personal motives.

Based on these theories, we hypothesized that the meaning of an activity facilitates flow and that the disposition to self-transcendence is a personality resource that helps individuals to discover meaning in different situations and to experience flow. Some support for the second hypothesis is provided by Teng (2011), who found a weak positive association ($r = .14$) between measures of self-transcendence and dispositional flow in a sample of online gamers. In order to explore these hypotheses at the situational level, we conducted a pilot quasi-experimental study, studying the effects of situational meaning (operationalized as the relationship of a task situation to an individual's life) and dispositional self-transcendence (as a subject variable).

We aimed to explore three research questions:

1. Are highly self-transcendent people more likely to experience flow when there is an opportunity to engage in a potentially meaningful activity?
2. Is self-transcendence associated with higher experience of meaning of a task and higher task productivity?
3. Are the effects of self-transcendence on experiential outcomes (perceived meaning, flow) contingent on the extent of task meaning within the task situation?

Methods

Participants

The participants were 82 undergraduate psychology students (first and second year) from a Moscow-based university, including 20 males and 62 females aged from 16 to 20 (median = 18). Out of 140 students registered for the course, 112 volunteered for the study and completed the pre-test; 82 of these were present at the experimental session.

Instruments

Activity Flow Scale (AFS: Payne, Jackson, Noh, & Stine-Morrow, 2011; translated into Russian by Author 1 and Author 2 for the present study), a 26-item instrument using a 5-point response scale. It includes nine subscales measuring specific aspects of flow experience: spontaneity, clarity of goals, concentration, feedback, balance of challenges and skills, altered sense of time, perceived control, loss of self-consciousness, and intrinsic enjoyment.

Brief Flow Scale (BFS: Collins, Sarkisian, Winner, 2009; translated into Russian by Author 2 for the present study) is a 5-item instrument that uses a binary response scale. It is a general index of flow, with items tapping into concentration on task, loss of self-consciousness, and sense of control. The internal consistency coefficients for this and the following measures are given in Table 2.

Existence Scale (Längle, Orgler, & Kundi, 2003; Russian version: Mainina, 2009). This instrument includes 46 items evaluated on a 6-point response scale, grouped into four scales corresponding to personality dispositions relevant to the four stages of existential dialogue with the world described in Längle's model: Self-Distancing (SD), Self-Transcendence (ST), Freedom (F), and Responsibility (V).

The Self-Transcendence scale includes 14 items tapping into one's capacity to relate to the world and perceive the significance of things and situations, e.g.: "I like to form my own opinions"; "I have a hard time realizing what relevance things have for my life" (reverse-scored); "Ultimately I can't relate to many things I have to deal with" (reverse-scored).

Perceived Quality of Time Scale (PQT: Leontiev, in preparation), a 15-item instrument. The respondents are asked to retrospectively evaluate their experience associated with a period of time (in the present study, the time they spent doing the experimental task), using a set of 7-point bipolar rating scales anchored by antonymous adjectives (e.g., "full of life … lifeless," "colorless … bright," "special … ordinary").

Situational Experienced Meaning scale (SEM: Leontiev, in preparation), a 21-item instrument. The respondents are asked to rate retrospectively an activity they were engaged in (in our case, participation in the experimental task), using a set of 7-point bipolar scales anchored by antonymous adjectives describing experiential correlates of a meaningful activity (e.g., "boring … interesting," "useful … useless," "purposeful … pointless").

Design and procedure

The study used a quasi-experimental design with dispositional self-transcendence and situational meaning (two levels) as independent variables. The dependent variables were task productivity and subjective experience (indicators of flow, experienced meaning, and life quality). The study involved three stages:

1. *Pre-test.* Students completed the Existence Scale 2 weeks before the experiment.

2. *Intervention.* The students were approached during their practical sessions (part of the creative thinking module of the general psychology course), which take place in groups of 25-30 students. The students were asked to form small groups (three to four individuals in each), in order to "to participate in a short creative thinking task".

The meaning condition was operationalized as two types of instructional leaflets (presented below in the supplementary information), one of which was given to each group on a random basis. The instructions asked students to use their psychology expertise in a creative task consisting in finding solutions to the social problem of firearm abuse by police officers. In the low-meaning condition, the problem was presented as taking place in African countries; in the high-meaning condition, it was presented as taking place in the students' home country.

The students were asked to work for 15 to 20 minutes and to write down as many realistic ideas as possible on a sheet of paper provided with the leaflet. The experimenter (AM) remained present in the room while the students worked, and reminded them when they had 5 minutes remaining to finish their work after 15 minutes had expired.

3. *Post-test.* Immediately after they finished work, the students were asked to return to their individual seats and to complete a set of questionnaires measuring their subjective experience of working on the task. They were also asked to indicate the number of minutes that the time working on the task felt like.

Three experts with a graduate degree in psychology were asked to rate the originality of each solution on a 5-point scale (from 1 — "not original at all" to 5 — "highly original") and its practicability on a 3-point scale (1 — definitely possible to implement, 0 — not sure, -1 — definitely not practicable). The experts worked independently and were not provided with the information about the type of instructions received by each group.

Results

Experience measures: Structure and reliability

The reliability of the complete BFS was fairly low (α = .65). Based on item analysis, one item (#3, the only one tapping into sense of control) was found to have a non-significant correlation with the scale (r = .05) and was excluded from the scale, which improved the reliability (α = .76).

The structure of the AFS was evaluated using exploratory and confirmatory factor analysis (Mplus 7.11, MLM estimator). The theoretical 9-scale measurement model for 26 items with one additional covariance between items 7 and 9 (similarly worded and belonging to the same subscale) fit the data fairly well (χ^2 = 330.49, df = 262, p = .003; CFI = .939; RMSEA = .056, 90% CI [.035–.074]). All the factor loadings were statistically significant and meaningful (standardized λ in the .44–.94 range). The internal consistency coefficients for the subscales (Cronbach's α) ranged from .63 to .90.

Table 1. Reliability and factor structure of the AFS subscales (N = 82)

AFS subscale	N items	Cronbach's α	1-factor model F1	3-factor model F1	F2	F3
Spontaneity	3	.82	−.28	−.08	.63	.59
Clear goals	3	.89	.78	.74	−.23	.04
Concentration on task	4	.85	.79	.77	−.08	−.15
Feedback	2	.74	.63	.67	.17	−.07
Balance of challenges and skills	3	.63	.65	.55	−.48	.10
Altered sense of time	3	.85	−.02	.02	−.19	.90
Sense of control	2	.90	.67	.76	.30	.11
Loss of self-consciousness	3	.90	−.05	.12	.80	−.18
Intrinsic enjoyment	3	.86	.73	.74	−.02	.03
% of variance explained			34.59	34.59	15.86	13.66

We used principal components analysis with Oblimin rotation to find out whether subscale scores would form a single index of flow. The internal consistency coefficients of the AFS subscales and the resulting factor structures are presented in the supplementary information. Three subscales (spontaneity, altered sense of time, and social evaluation) exhibited low loadings on the single factor. Based on the scree plot, we studied a 3-factor model explaining 64% of the variance (see Table

1). Six out of nine flow subscales loaded on the first factor. The second factor was interpreted as the social evaluation/spontaneity dimension, reflecting individual differences in reaction to work in a group setting. The time subscale formed a separate, third dimension. Because the structure could reflect the specific features of the experimental situation (group setting and the presence of an external time limit), we used a sum of the six subscales with high loadings on the first factor to form a total flow index, which was moderately correlated with the BFS (see Table 2).

Because of the limited data on the structure of the PQT and SEM scales, we studied it using principal components analysis. For the PQT scale, we chose a single-factor model explaining 43.6% of the variance (factor loadings in the .34–.82 range for all items) and interpreted as positive vs. negative evaluation of the time that has passed. The SEM scale turned out to be heterogeneous, and we chose one of its dimensions most closely related to the theoretical definition of meaning, including 7 items: "important … unimportant", "related to someone … not related to anyone", "purposeful … aimless", "fruitful … fruitless", "related to life … excluded from life", "consequential … inconsequential", "necessary … unneeded".

Table 2. Correlations among the study variables (combined sample, N = 82)

	α	SD	ST	F	V	BFS	AFS	SEM
SD	.67							
ST	.80	.53***						
F	.76	.46***	.56***					
V	.79	.55***	.45***	.61***				
BFS	.76^x	-.11	.08	.08	-.07			
AFS	.90	.04	.25*	.22*	.11	.59***		
SEM	.81	.14	.26*	.06	.07	.33**	.65***	
PQT	.90	.15	.13	.11	.05	.44***	.70***	.65***

Note: ^{x} — based on tetrachoric correlation matrix; *** — $p < .001$, ** — $p < .01$, * — $p < .05$; SD — Self-Distancing, ST — Self-Transcendence, F — Freedom, V — Responsibility, BFS — Brief Flow Scale, AFS — Activity Flow Scale, SEM — Situational Experienced Meaning, PQT — Perceived Quality of Time.

Task productivity characteristics

There were 24 small groups, which produced 254 solutions. The correlations among the ratings of the solutions by the three experts were moderate (r in the .43–.63 range) and the reliability (Cronbach's α) of the combined score from the three experts was sufficient for both originality (α = .78) and practicability (α = .76).

There were no significant differences between the average number of solutions per group produced by groups working under the high-meaning (N = 13) and low-meaning (N = 11) conditions (Cohen's d = .45, t(22) = 1.01). However, individual solutions produced under the meaningful condition (N = 126) were rated by the experts as more realistic and practicable (d = .43, t(252) = 3.41, p<.001), although less original (d = .32, t(252) = 2.51, p<.05), compared to the solutions generated under the low-meaning condition (N = 128).

The effects of self-transcendence and task meaning

The correlations among the study variables for the two experimental conditions separately are presented in Table 3. In the low-meaning condition, existential personality indicators exhibited positive associations with the AFS, situational meaning, and perceived quality of time. In the high-meaning condition, the only such association was a negative association of perceived quality of time with responsibility, suggesting that more responsible individuals tended to enjoy the process less.

Table 3. Correlations of the study variables in the high-meaning condition (N = 40, above the diagonal) and the low-meaning condition (N = 42, below the diagonal)

	SD	ST	F	V	BFS	AFS	SEM	PQT
SD	–	.55***	.52***	.52***	−.22	−.23	−.16	−.22
ST	.62***	–	.63***	.58***	.01	.13	.07	−.17
F	.47***	.62***	–	.61***	−.02	.03	−.11	−.20
V	.56***	.41**	.66***	–	−.06	−.06	−.19	−.33*
BFS	−.05	.11	.12	−.06	–	.68***	.26	.42**
AFS	.17	.32*	.35*	.20	.52***	–	.53***	.49**
SEM	.31*	.42**	.23	.24	.38*	.74***	–	.55***
PQT	.31*	.34*	.32*	.25	.44**	.81***	.73***	–

Note: *** p < .001, ** p < .01, * p < .05. SD — Self-Distancing, ST — Self-Transcendence, F — Freedom, V — Responsibility, BFS — Brief Flow Scale, AFS — Activity Flow Scale, SEM — Situational Experienced Meaning, PQT — Perceived Quality of Time.

In order to evaluate the combined effects of self-transcendence and experimental manipulation on the dependent variables, we applied hierarchical multiple regression. Based on investigation of scatterplots, we decided to investigate the possible non-linearity of the associations by including a quadratic term. Effect coding was used for the meaning condition (-1 for low-meaning, 1 for high-meaning). Self-transcendence scores were centered. First-order and second-order interaction terms were created by multiplying the self-transcendence scores by the meaning condition variable. First-order interaction term, quadratic term for self-transcendence, and quadratic interaction term were entered at steps 2, 3, and 4, respectively. The results of hierarchical multiple regression analyses are presented in Table 3. We followed by testing simple effects for linear and quadratic models for each of the two conditions separately (the detailed results are given in the supporting information).

The results indicate that the experimental manipulation of task meaning had no main effect on the characteristics of the resulting subjective experience. Self-transcendence was significantly positively associated with clarity of goals, perceived balance of challenges and skills, and freedom from social evaluation, suggesting that self-transcendent individuals find it easier to perceive the task structure in a way that is conducive to flow and are less prone to engage in self-focused processing. Self-transcendence was also marginally positively associated with the subjective experience of meaning and the overall index of flow.

Table 4. Hierarchical regression of experiential outcomes on self-transcendence and task-meaning

	BFS	AFS	SPO	GOA	CON	FDB	BAL	ALT	CON	LOS	ENJ	SEM	PQT
Step 1 (ΔR^2)	.01	.06	.00	.08*	.03	.01	.07*	.04	.02	.15**	.01	.08*	.02
ST	.07	.24*	.02	.29*	.18	.10	.27*	-.19	.11	.35**	.07	.26*	.13
Meaning	.08	.02	.02	.01	-.01	.06	-.00	.06	.07	.17	.01	.12	-.02
Step 2 (ΔR^2)	.00	.01	.00	.02	.01	.01	.01	.09**	.01	.03	.02	.03	.07*
ST	.06	.23*	.03	.27*	.18	.09	.26*	-.21*	.10	.36**	.06	.25*	.11
Meaning	.08	.02	.02	.01	-.01	.06	-.00	.06	.07	.17	.01	.11	-.03
STxMeaning	-.05	-.11	.01	-.15	.07	-.10	-.12	-.30**	-.07	.18	-.15	-.18	-.26*
Step 3 (ΔR^2)	.01	.01	.03	.00	.01	.00	.00	.02	.07*	.02	.01	.02	.00
ST	.01	.17	-.08	.25*	.12	.10	.27*	-.29*	-.05	.29*	.01	.17	.15
Meaning	.07	.02	.01	.01	-.01	.06	-.00	.05	.06	.16	.01	.11	-.02
STxMeaning	-.05	-.11	.01	-.15	.07	-.10	-.12	-.30**	-.08	.18	-.15	-.18	-.26*
ST^2	-.11	-.12	-.21	-.04	-.12	.02	.01	-.14	-.30*	-.15	-.09	-.15	.06
Step 4 (ΔR^2)	.08*	.20***	.02	.16***	.20***	.06*	.05*	.02	.11**	.00	.06*	.06*	.07*
ST	-.01	.14	-.07	.23*	.09	.09	.26*	-.29*	-.07	.29*	-.01	.16	.13
Meaning	.32*	.41**	-.11	.35**	.38**	.27	.21	.17	.35*	.19	.22	.31*	.21
STxMeaning	-.21	-.37**	.09	-.38**	-.20	-.24	-.25*	-.37**	-.27*	.16	-.29	-.32**	-.42**
ST^2	-.13	-.17	-.20	-.08	-.17	-.01	-.01	-.16	-.33**	-.15	-.12	-.18	.04
ST^2xMeaning	-.40*	-.66***	.20	-.58***	-.66***	-.35	-.34*	-.20	-.48**	-.05	-.35*	-.34*	-.38*
R^2 adj. Total	.04	.24	.00	.21	.20	.02	.09	.10	.14	.14	.03	.13	.10

Note: *** p < .001, ** p < .01, * p < .05. ST — Self-Transcendence, BFS — Brief Flow Scale, AFS — Activity Flow Scale, SPO — Spontaneity, GOA — Clear Goals, CON — Concentration on the Task, FDB — Feedback, BAL — Balanced of Challenges and Skills, ALT — Altered Sense of Time, CON — Sense of Control, LOS — Loss of Self-Consciousness, ENJ — Enjoyment, SEM — Situational Experienced Meaning, PQT — Perceived Quality of Time.

There were significant negative interaction effects between self-transcendence and task meaning for the altered sense of time subscale of the AFS and for the Perceived Quality of Time scale. These effects indicate that in the low-meaning condition, individuals with higher self-transcendence were more likely to experience altered sense of time and enjoy the time spent working on the task; however, in the high-meaning condition, self-transcendent individuals were not as likely to get absorbed in the process and enjoy it. The addition of a quadratic term for self-transcendence at step 3 was only significant for the perceived control subscale of the AFS, suggesting a non-linear relationship.

Finally, interaction effects between the quadratic term of self-transcendence and task type emerged as the strongest effects. They were significant for nine dependent variables and marginally significant for one more. The coefficients suggest that the pattern of the difference in scores follows a similar pattern for all the indicators.
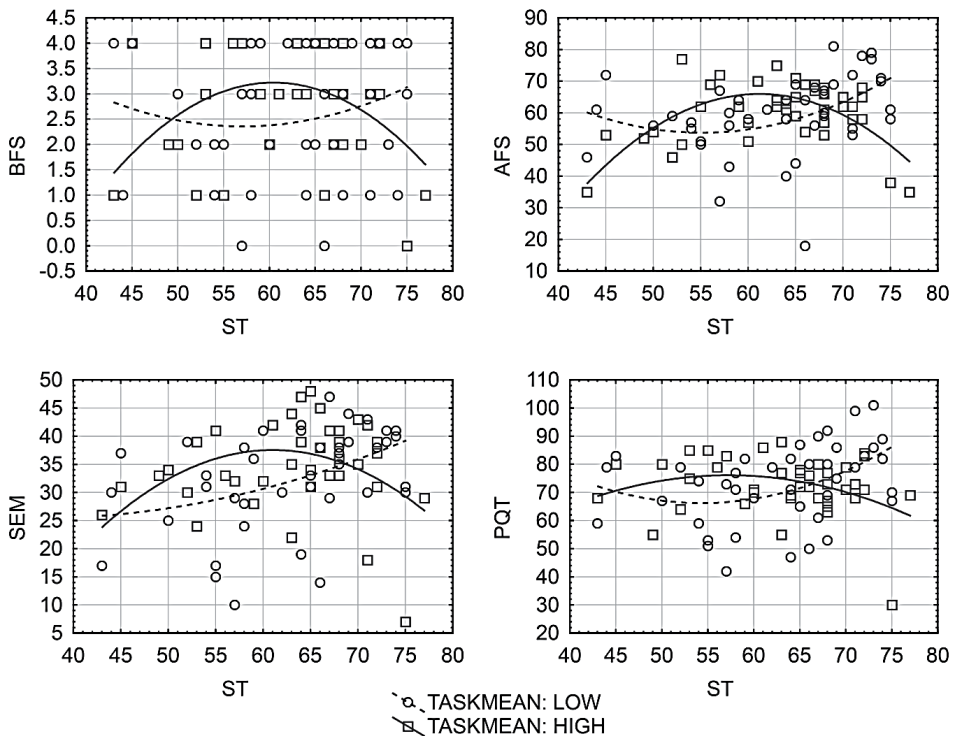
Note: ST — Self-Transcendence, BFS — Brief Flow Scale, AFS — Activity Flow Scale, SEM — Situational Experienced Meaning, PQT — Perceived Quality of Time.

Figure 1. Fit of the quadratic functions in the low-meaning and high-meaning conditions.

Simple effects analyses indicate that in the low-meaning condition self-transcendence was positively associated with overall flow, clarity of goals, perceived balance of challenges and skills, experienced meaning, and perceived quality of time. In all of these cases the fit of the quadratic model was significantly better than

the fit of the linear model, but the differences in explained variance were rather small ($\Delta R^2 < .1$). In contrast, in the high-meaning condition, linear function fit well only for the altered sense of time and freedom from social evaluation subscales of the AFS. For the BFS, total AFS score, clarity of goals, concentration, perceived control, and subjective experience of meaning this association had a pronounced inverted U shape. The absolute differences between the variance explained by the quadratic and the linear model were also considerable ($\Delta R^2 > .1$).

The fit of the resulting functions is shown inn Figure 1. The uniform pattern, which replicates across different measures, indicates that under the low-meaning condition, self-transcendence has a weak, positive, and mostly linear relationship to the experiential outcomes. However, under the high-meaning condition, this effect is clearly non-linear, suggesting that individuals with high self-transcendence scores tend to drop out of the "flow channel".

Discussion

We used a group creative task with two levels of situational meaning, which was operationalized as the presence of a given relationship of an activity to the participants' lives. In the low-meaning condition, the task was framed as an abstract one, a practice task on group creativity. In the high-meaning condition, the task was presented as related to the larger context of each participant's life, with its results having a potential practical value for society.

The meaning manipulation itself did not have a pronounced effect on the retrospective evaluations of the resulting experience. Participants under both conditions, on average, perceived the situation as somewhat meaningful and experienced similar levels of flow. The learning context and the creative nature of the task may have contributed to its perception as meaningful and enjoyable under both conditions. Another possible explanation for the absence of the effect of task on flow is that flow is a positive emotional phenomenon, whereas the task consisted in preventing a potential threat. Hence, its meaning would be subjectively reflected in negative emotions, which could interfere to some extent with the positive valence of flow.

We did not find any significant differences in the number of creative solutions produced for the social problem under the two conditions. However, the strongly significant differences between the qualities of the resulting solutions indicate that under the low-meaning condition, students tended to come up with creative, but abstract solutions, difficult to implement in practice. Under the high-meaning condition, students tended to come up with more realistic and potentially more useful ideas. This finding is in line with Leontiev's (2013) position that meaning is not an emotional experience, but a regulatory process that can have effects on cognition.

The findings of this pilot experimental study suggest that self-transcendence as a personality disposition is associated with task engagement, experienced task meaning, and flow. However, these associations have different shapes in the two situations: under the low-meaning task condition, self-transcendence showed a linear relationship to these outcomes, but under the high-meaning condition, this relationship was curvilinear. This suggests that the positive effects of self-transcendence may be more evident in uncertain settings, where tasks have no given meaning and the latter is to be discovered or created by the person. This is in line with

the existential understanding of self-transcendence as the ability to relate to and to become motivated by values.

Out of the four dispositions measured by the Existence Scale, self-transcendence had the strongest correlations with flow indicators and was also the only scale to exhibit significant interaction effects with the experimental manipulation.

However, the results suggest that in situations of highly meaningful activities associated with solving real-life problems, very high levels of self-transcendence may result in over-engagement and suboptimal experience (whether this applies to tasks in general or only to tasks with negative meaning is yet to be investigated). The general pattern of a linear association in the low-meaning condition and quadratic association in the high-meaning condition is reminiscent of the findings of Abuhamdeh and Csikszentmihalyi (2009), which suggests that a combination of high intrinsic motivation orientation and high challenge may be detrimental to flow. This non-linearity may underlie the low correlation between self-transcendence and flow that Teng (2011) observed at the dispositional level.

Limitations

The non-linear associations of self-transcendence with the characteristics of subjective experience under high-meaning conditions have to be replicated in more controlled experimental settings. Because self-transcendence is a complex construct, future studies of these associations need to control for related constructs, such as extraversion or intrinsic motivational orientation, that could serve as potential confounds.

One limitation of the study was the absence of proper randomization at the small-group level. Although there were no significant differences in any of the measured personality characteristics between the participants under the two experimental conditions, the fact that the students worked in self-formed groups may have influenced the outcomes.

Another limitation was that operationalization of task meaning as its relation to the participants' home country may invoke potential confounds, such as practical knowledge and information availability, which could have influenced the qualitative characteristics of the resulting solutions.

Conclusion

The findings of the pilot study suggest that self-transcendence is a personality disposition that influences the way people engage with tasks. The results support the existential idea that self-transcendence helps to discover meaning, especially in situations when it is not readily available. However, high levels of self-transcendence may undermine optimal engagement and flow in highly meaningful situations.

A potential future research avenue is to find out whether the associations of objective task characteristics and self-transcendence with the resulting flow experience are indeed mediated by perceived meaning of the task. Are self-transcendent individuals more likely to see any task as meaningful, because they engage in meaning-making and actively relate the content of their task to some larger context of their lives?

Future studies could investigate the differences in the effects of tasks with meaning reflected in positive and negative affect (activating approach and avoidance motives, respectively). Different aspects of task meaning, personal (the relation of the task to the context of individual life and personality) and social (its relation to the context of society at large) could also be isolated. Finally, future studies could investigate the effects of self-transcendence on meaning-making in unstructured and truly meaningless situations, more representative of real life than a structured and predictable university seminar is.

We call for more research linking flow theory and existential approach, using academic tools to clarify the nature and content of existential constructs, which could benefit future research and theorizing.

Acknowledgments

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Appendix

Text of the instruction leaflets

Low-meaning condition

Dear colleagues:

We are asking you to take part in a brief creative task and to participate, as young experts, in the solution of a rather serious social problem.

In most countries of the world, employees of state law enforcement agencies (such as police officers) are permitted to carry and use firearms. However, in African countries this often leads to firearm abuse. During their off-work hours, police officers go on using their weapons, often for criminal purposes. Innocent civilians become their victims. The governments of African countries are trying to develop different strategies to solve this problem. We are asking you to use your knowledge of psychology to propose some ideas regarding possible measures to prevent firearm abuse among police officers in African countries.

We are asking you to work for 15 to 20 minutes in small groups, in order to come up with your ideas and write them down in a list. The more ideas you can suggest, the better. There are no limitations, but please remember that the measures have to be realistic enough to be implemented.

High-meaning condition

Dear colleagues:

We are asking you to take part in a brief creative task and to participate, as young experts, in the solution of a rather serious social problem.

You may be aware that in our country there have been cases of firearm abuse by employees of state law enforcement agencies (such as police officers). One recent example was the affair of Major Denis Evsyukov, who came with his pistol to a supermarket in Moscow, where he shot two people and wounded seven more. His victims were regular supermarket customers, and each of us could have been in their position. A number of cases like this take place every year, and the Ministry of Interior Affairs is looking for ways to change the situation, turning for advice to different experts, including psychologists. We are asking you to use your knowledge of psychology to propose some ideas regarding possible measures to prevent firearm abuse among police officers. Your ideas could potentially save someone's life.

We are asking you to work for 15 to 20 minutes in small groups, in order to come up with your ideas and write them down in a list. The more ideas you can suggest, the better. There are no limitations, but please remember that the measures have to be realistic enough to be implemented.

SPEECH AND SEMANTIC

Cognitive abilities and creating metaphorical names

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The cognitive processing of metaphor creation has been insufficiently investigated. Creating metaphors requires the ability to work in a fantastic, impossible context, using symbolic and associative means to express oneís thoughts. It has been shown recently that intelligence plays an important role in the creation of metaphors, but it is not the main factor in determining their success. The present research explores the roles of conceptual abilities, categorical abilities, and flexibility (as the factor creativity) in metaphor creation. Participants (n = 38 young adults) were asked to come up with names for three photos, without any special instruction to create metaphors. To classify conceptual abilities we used ìConceptual Synthesisî (M. A. Kholodnaya, 2012); to measure categorical ability we used the subtest ìSimilaritiesî (D. Wechsler, 1955); to identify the role of creativity in the metaphor process we used the test of ìUnusual Usesî (J. P. Guilford, 1960). The creation of complex metaphorical names was associated with a tendency to create highly organized mental structures and to retain them within the general semantic context ($r = 0.344$, $p < 0.05$). The tendency to create single-level situational connections was associated with a tendency to give specific names to photos ($r = 0.475$, $p < 0.01$). Photographic images proved out to be fruitful stimuli to investigate the processing of visual information. We developed a preliminary classification of names: 1) concrete; 2) situational; 3) abstract; 4) metaphorical (M1 and M2). We identified two types of metaphorical names — perceptual and complex metaphors — that relate to conceptual abilities in different ways. It is inaccurate to speak about a general concept of ìmetaphorical abilitiesî; we should differentiate the psychological mechanisms that lie at their base.

Keywords: naming, denotation, metaphor creation, conceptual abilities, categorical abilities, flexibility

Introduction

Naming an object is a task that any child or adult performs many times a day; it suggests its assignment to a category. When we "operate with every single concept, the point is that we are operating with the system as a whole" (Vygotsky, 1982, p. 131). In addition to well known logical categories, flexible categories have been described. Flexible categories (ad hoc categories, Barsalou, 1983), goal-derived categories (Vallée-Tourangeau, 1998; Ross, 1999; Ratneshwar, 2000) are created by people on the basis of their goals of immediate interest, and may include completely different concepts that have, at first glance, few common attributes or none at all (Ratneshwar, 2000).

In recent decades, studies of concept formation have paid more attention to sensory experience than to formal logic. Many linguistic examples show that concepts that are not based on direct experience are created and interpreted via metaphor, metonymy, and mental imagery. These structures allow us to use sensory experience, yet go beyond the sensual reflection of external reality (Johnson, 1990; Lakoff, 2011). Special attention has been given to metaphors in cognitive studies. Metaphor makes knowledge more "tangible," as it helps us to understand an abstraction in terms of something more concrete, familiar, and a subject of one's personal experience. A metaphorical proposition consists of two components: a topic reflecting an object of thought, and a concept ("source") allowing the author to convey an idea about the topic. The essence of metaphor is "understanding and experiencing one kind of thing in terms of another" (Lakoff & Johnson, 1980, p. 5). Analysis of the metaphors created by a person shows how he integrated new information into his existing system of knowledge, giving it meaningful accents.

The objective of our study was to explore the role of conceptual abilities, categorical abilities, and flexibility (as factor of creativity) in creating metaphorical names for visual objects, using the word "name" as shorthand for denotation. In fact, the creation of metaphors is the original method of categorization of an object. Metaphor is a kind of dynamic "superordinate attribute category" (Glucksberg, 2001) which has not yet been fixed in the language system, but is constructed as an ad hoc category.

When creating a metaphor, its author intends to communicate an idea about a topic. To achieve this he must scan his semantic knowledge for suitable vehicles that exemplify his idea. For example, the author wants to say that "music is something that heals." In this case "something that heals" is a superordinate attribute category. The search process can lead to the concept of "medicine" and a metaphor might be "music is a medicine". During this process, the author suppresses many kinds of knowledge: aspects of the topic and possible concepts ("source") that are not relevant to the higher-order category; readily accessible from memory but irrelevant semantic knowledge (e.g., adjectival descriptions of the topic); clichés and dead metaphors. Finally, he assess whether the metaphor conveys the desired meaning and emotional tone (Silvia & Beaty, 2012). In the theory of T. Lubart (2009), emotional resonance is the basis for finding the source of metaphor.

Metaphoricity, along with fluency, originality, and receptivity, refers to the properties of intellectual activity affecting creativity (Kholodnaya, 2002). Creating metaphors requires the ability to work in a fantastic, impossible context, to use symbolic and associative means to express one's thoughts, and to see the complex in the simple and the simple in the complex (Kholodnaya, 2002; Sapogova, 1996). Intelligence plays an important role in the creation of metaphors, but it is not the main factor in determining their success. Intelligence[1] explains 24% of the variance in the experts' assessment of the "creativity" of the created metaphors[2]. And this effect remained even when personality was added to the model (as measured by the "Big Five" questionnaire) (Silvia & Beaty, 2012). Together, personality and fluid intelligence explained 35% of the variance in the quality of creative metaphor. The ability to create metaphorical analogies[3] is related to performance on tests of abstract analogies (r = 0.31) and verbal analogies (r = 0.48)[4] (Barros & Primi, 2010). Verbal fluency is also associated with the development of creative metaphors (Silvia & Beaty, 2013). Crystallized intelligence had a moderate but insignificant effect on the generation of creative metaphors (ibid.).

The mechanisms of searching for concepts with the necessary properties to convey the Ideas of metaphor's author are described in a number of semantic models. The most famous of those models is LSA (latent semantic analysis, Kitsch's Predication Model). According to this model, the concepts are considered as nodes in a 300-dimensional semantic space which are located at different distances from each other, depending on the frequency of co-occurrence of the concepts and their semantic proximity. Following this model, the understanding and creation of metaphor requires the contribution of working memory and vocabulary, as has been experimentally verified (Chiappe & Chiappe, 2007). It has been shown that the ability to produce a good metaphor[5] is positively related to working memory (Listening Span; Digit Span Reverse, but Not Forward), verbal fluency (reproducing as many rare words for a given category as possible, Retrieval Fluency), testing of vocabulary for naming pictures (Peabody Picture Vocabulary Test).

An interesting approach to explaining the psychological mechanisms of metaphor production was proposed by L.I. Shragina (2000) in "Producing associations by similarity". Respondents were given 10 concrete concepts (pencil, iron, lamp, etc.) with the task to create as many associations by similarity as possible, answering the question: "Who or what is it like?" The responses were divided into four groups: 1) stereotypical associations; 2) original "direct" comparisons; 3) original associations with details; 4) original "indirect" comparisons. Original indirect

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[1]   A battery of tests was used to measure fluid intelligence: six non-verbal tests, most of which assessed inductive reasoning (Raven's matrices, culturally independent Cattell test, etc.).

[2]   The creativity of each metaphor was estimated by three independent experts (5-point scale), determined by three criteria: semantic distance of concepts (remoteness), novelty, cleverness.

[3]   An example of such a metaphorical analogy is: "The camel is the _____ of the desert".

[4]   There was also a battery of tests on different kinds of analogies (spatial, abstract, verbal, numerical, mechanical) (Battery of Reasoning Tests [BPR-5]).

[5]   Subjects were presented with a topic (e.g., ìSome jobs are _____î) as well as a property to be attributed to the topic (e.g., ìconfining and constraining, and make you feel like you are just putting in timeî) (Pierce & Chiappe, 2009).

comparisons differ from the other kinds of answers by the high level of details; the inclusion of a stimulus as a part into a new wholeness, by comparison of incompatible things; the presence of imaginary characters; vivid imagery; and emotional coloring. In original indirect comparisons, the author creates a mental image that does not convey a separate set of common features, but reflects the movement of thought deeper into the object by detecting and creating new meanings.

The ability to create metaphors is manifested in children between the ages of one and one and a half in symbolic play, in which one object begins to substitute for another (Winner, 1981). For example, an 18-month child calls the toy car that she pushes along her mother's arm a "snake"; a two-year-old child called her teddy bear "zucchini", when grating it against the arm of the chair, which she called "a grater" (Winner & Gardner, 1981). Such metaphors are called enactive because the child develops symbolic functions through action with the object. Another type of early metaphor is the perceptual metaphor that is based primarily on a surface resemblance. We encounter such metaphors when a three-year-old child calls a red and white stop signal "a lollipop". With age, the number of enactive metaphors decreases, while the number of perceptual metaphors increases. This corresponds with the general dynamics of mental development, when operations with material objects are complemented by operations with images. It is interesting that during secondary school, the originality of the metaphors produced and their quantity decrease; however, under conditions in which it is desirable to produce metaphors, children of the "literal period" have no difficulty in creating new metaphors (Winner & Gardner, 1981). In the late teens and adolescence, metaphorical abilities are "restored".

In a series of experimental studies, E.E. Sapogova (1996) concluded that the ability of preschool children to understand and create metaphors is much greater than had previously been believed. She found that tasks that involve the creation or interpretation of metaphor or nonsense activated one of the general mechanisms of the imagination: the construction of a new frame. "The child usually builds a new frame around one isolated attribute, object, or situation, changing it and using it as a generating principle for building a new whole" (p. 44).

To sum up, studies of metaphor creation are searching for the cognitive abilities to influence this process and its age-related patterns. However, psychological mechanisms of producing metaphor need further research. Metaphors are thought to be the products of creativity, although the success of metaphor creation and the results of traditional tests of creativity are linked either moderately or not at all (Avanesyan, 2013). The review of different studies shows the variety of tasks for metaphor creation, but the authors make the extension of the found trends to the creation of metaphors in general.

Method

Most studies of the creation of metaphors are based on verbal material. In our study, the stimulus was presented by photos. Participants were instructed to come up with three names for each photo. There was no special instruction given about the use of metaphor.

Creating metaphors involves finding similarities between semantically distinct concepts. In connection with this statement, we have formulated several hypotheses about which cognitive abilities may affect the ability to create metaphorical names.

Hypothesis 1. The ability to create metaphorical names is correlated with conceptual abilities.

Conceptual ability refers to mental characteristics respecting the process of conceptualization and the generation of new semantic content that does not come from external conditions or previously learned individual knowledge (Kholodnaya, 2012). Creating metaphorical names involves connecting two concepts from distinct domains within a single semantic space. The process of creating a metaphorical name allows the author to identify and convey his ideas about the picture. We hypothesized that a personís ability to move freely over a large semantic distance in the search of names is related to his conceptual abilities.

For diagnosis of conceptual abilities we chose the method of "Conceptual Synthesis" by M.A. Kholodnaya, which is a modified version of the method of Cognitive Synthesis by Abraham, Okoniewski, & Leman (1987 / cited in Kholodnaya, 2012). The participants had to combine into one sentence three stimulus words, taken from different contexts (4 triads). This required creation of a single semantic space in which these concepts were to be consistently linked. The maximum score was received by participants who could construct complex mental structures with transitions from one semantic space to another, but within the general semantic context, which can be compared with the mechanisms underlying the creation of metaphor.

The following criteria were used for assessing each alternative answer to the example of the triad "chain — fire — watch":

0 points - if only two of the three words are linked in the sentence (ìModern metal-heads wear chains on their wrists like you would a watchî);

1 point - if a connection is established by a simple listing of items or their formal opposition ("You can melt glass from a watch in the fire, but probably not a chain"; "A watch, chain, and fire are all things people need to deal with their problems");

2 points - all three words are included in a specific situation ("The Red Army commander in the years of the Revolution is standing with his silver watch, in chains, and any minute he may be burnt to death in the fire");

3 points - all three words are put together through some generic categorical basis or the use of complex analogies or the use of one causal relationship or another ("Fire is a chain of oxidation; watches are also a closed chain of successive positions of the watch mechanism; and the chain itself is also composed of several identical links").

Hypothesis 2. The ability to create metaphorical names is associated with categorical abilities.

Initially, it may seem that the creation of metaphors doesn't require aptitude for conceptual generalization and is more likely to be a "fantastic binomial". However, "the source of metaphor is a conscious error in the taxonomy of objects" as "a meta-

phor works as a categorical shift ... [it] rejects the object's membership in the class to which it actually belongs and claims inclusion in a category to which it cannot be attributed on a rational basis. Metaphor is a challenge to nature" (Arutyunova, 1990, pp. 17–18). Thus, for a categorical shift to occur, it is necessary for the hierarchy of generic concepts to have already been formed. "The word is converted into a 'category' only if the person is able to allocate specific and general features, and the word has a definite place in the 'grid' of categories of different level of generality" (Kholodnaya, 2012, p. 230). To measure categorical ability, the subtest "Similarities" of D. Wechsler's test was used. Stimulus material was formed by 13 pairs of words; for each pair, the subject must find similarity between two concepts (Filimonenko & Timofeev, 2004).

This raises the concern that within-group differences in intellectual abilities might be minimal, because the sample of participants was initially formed of students from leading universities.

Hypothesis 3. The ability to create metaphorical names is related to the level of verbal creativity.

Coming up with names for pictures is a task for divergent thinking: It does not presuppose a right or wrong answer. To identify the role of creativity in metaphor processing, we used the "Unusual Uses" test by J.P. Guilford (Tunick, 1997). The participant was given the following instruction: "The newspaper is used for reading. You can think of other ways to use it. What else can you do with it? How can it be used?" The most interesting for us was the factor of "flexibility", which captures the ability to cross boundaries and to integrate remote concepts. It demands building a new frame and requires the participants to transfer from one familiar system to another, also familiar, but not at all typical of the subject. Flexibility is measured by the number of different categories of usage of the object suggested by the participant. Since the creation of metaphor requires finding similarities between the two concepts of entirely remote semantic fields, it can be assumed that the participants who created the metaphorical names would have better results for "flexibility" in the J. P. Guilford test.

Subjects

The sample consisted of 40 (19 female and 21 male) participants, aged 18 to 27; all were native speakers of Russian. The sample included students and graduates of higher educational institutions of a technical and creative profile, as well as psychology. One of the initial hypotheses was about difference in the ability to create metaphorical names of the representatives of the three groups. However, mathematical analysis of the data did not show any statistically significant differences in the measured indicators. The subjects gave informed consent to participate in the study.

Stimulus material was presented by photographic images. Participants were instructed to come up with three original names for each photo. The photos were taken so that there was one object on a solid background, one object on a more complex background, and one situation of interpersonal interaction. We were guided by the fact that the images were not "noisy", and all the details were easily identifiable. Pictorial stimulus material is not typical for the assessment of metaphorical abilities;

usually respondents are asked to produce a metaphor for different situations. For example in Silvia and Beaty (2012), participants were presented with two different prompts and were asked to describe their past emotional experiences using a metaphor. In the first task, they were asked to "think of the most boring high-school or college class that you've ever taken. What was it like to sit through it?" For the next task, participants were asked to "think about the most disgusting thing you ever ate or drank. What was it like to eat or drink it?"

In our case, the instructions didn't bias the participants in favor of producing metaphors. The pictures were introduced with the phrase: "Now you will need to come up with original names for pictures. How would you name them? Give three names for each picture". After the main task, participants were asked, "Why did you name the photo that way?" The photos were presented one by one, and there was no time limit for thinking up names. At this stage of research we did not take the level of complexity or specificity of the images into consideration. At the preliminary stage of the study, which involved 13 people (5 females, 8 males) from the ages of 19 to 23, it had been confirmed that the images were given different names, metaphorical names among them.

The empirical classification of names was developed on the basis of theoretical analysis. We assumed that the category to which the participants attributed the object depicted in the photograph might coincide with the object itself (the object is a), might be its generic category (the object is A) or a category associatively connected with it (the object is A'). It was assumed that the association could be of different types: by similarity, by contrast, by contiguity in space or time, or by cause and effect. Metaphorical names were likely to apply to the type of original associations by similarity, including metaphorical "shift".

Description of stimulus material

Figure 1 shows a soap bubble on a dark blue background.

Figure 1.
©Tomo.Yun, http://www.yunphoto.net

Figure 2 shows a glass with a drink on the edge of the roof at sunset. If you look closely, you can see the port in the background.

Figure 2.
©E. Yu. Khaibrakhmanova (author of the article)

In Figure 3 we see a couple of people sitting among concrete blocks; the city is in the background. These blocks are part of the Holocaust memorial in Berlin. After the presentation of the third photo, the participants were asked whether they knew what it was. There were two people who knew, and the answers of these participants were removed and were not involved in the further processing of data.

Figure 3.
©E. Yu. Khaibrakhmanova (author of the article)

Preliminary empirical classification of names

When assigning names to the selected type, we took into account not only the name, but also the explanation for it. Four types of names were identified. Two experts analyzed the names, both of them psychologists with experience in qualitative analysis of empirical data; they worked independently of each other.

1. Concrete (descriptive) type. The name produced is the name of the object in the picture. For example, photo 1 got the name "Bubble".

2. Situational type. The name reflects the feelings and memories of the participant evoked by the photo and conveys his or her emotional state. The names of this type for photos 1 were: "All in one place (the sea is joy, happiness, all in one place)", "Childhood" (memories of childhood, when "everyone was blowing bubbles"). Some names of this type contained a unique

imprint of personal experience. However, there was no "metaphorical shift" of meaning in these names. Also spatial and temporal associations with the depicted object could be quite clearly observed. Some of the answers that fall into this category could be attributed to the metaphorical type, but the comments by the participants helped to assign the name to the appropriate category. For example, the name "Childhood" was classed as situational, if the participant replied that "as a child I loved to blow bubbles" and as metaphorical, if "... like a memory of childhood, it is fragile and rapidly disappearing".

3. Abstract type. Such names are mostly abstract concepts that reflect the individual characteristics of the object, which have been generalized and reflected in a category of a higher level. Such names for the picture of the bubble were "Roundness", "Perfect Shape", "Sphere", "Microcosm" (because "it is a greatly enlarged object on a blurred background"). The names show that the soap bubble turned out to be an example of a more "universal" phenomenon.

4. Metaphorical type. The names of this type involved a "semantic shift", i.e., deviation from the conventional categorical system, to which an object pictured in the photo belonged. Metaphorical responses were divided into two groups: M1 and M2.

Group M1 included metaphors formed on the basis of sensory similarities between the object depicted and something else, and based on the properties of the different modalities (often visual and tactile). Examples of M1 metaphorical names for photo 1 are: "Planet", "The World in a Drop", "Eye", "Egg", "Lake in the Ball", "Crystal Ball", "Sky", "Cocoon." Such metaphors are usually called perceptual metaphors[1].

Group M2 was formed by complex metaphors; the highlighted characteristics were not transferred to another specific object, as in the case of M1, but were generalized with a semantic shift typical of metaphors. The soap bubble ceased to be a soap bubble and turn into "Inner World", "Tempest in a Teapot", "Space of Spring", "The Most Important Thing", "Prism of the Truth", "Last Bastion", "Myopia".

When considering the metaphorical names, it is legitimate to ask whether it is possible that one component of the metaphor is an image, and the other is the word.

One of the types of visual metaphors described in the literature is an integrated metaphor (Forceville, 1994), where an object is represented in such a way that it resembles another object, but does not lose its identity. In such integrated pictorial metaphors, the principle of the identity of the components of the metaphor "A is B" is implemented "literally": Each of the two objects retained its semantic integrity, to which an addressee could refer at any moment. The source is not presented in the

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[1]   The example of perceptual metaphor for the second photo is "City in the Glass", which is based on a visual illusion; for the third photo perceptual metaphors are often based on such properties as color (dark and light blocks, like "Piano Keys"), location (blocks facing each other, like a "Labyrinth").

picture; it is hinted at, as if it symbolically exists in the picture. The names that reflect this "duality" of the image have been attributed to the M1 type. The addressee conceived the object or situation in the photo in light of these names. The names became the bridge between the two grounds of the photos — the "literal" and the "figurative".

In addition to the M1 responses, which underlined the perceived similarity of the objects, we encountered another, more abstract type of figurative answer. By definition, in a metaphor the more complex and difficult thing is understood and experienced in terms of more concrete and sensual thing (Lakoff & Johnson, 1980). However, the images on the stimulus photos are more concrete and descriptive than the names given to them. We can assume that the names of the second type (M2) are "backward" metaphors, i.e., the images themselves are vehicles for the transmission of complex abstract ideas (as conveyed in the name) (Fig. 4). For example, "To imagine what the 'space of Spring' is like, look at the photo of the soap bubble"[1].

$$\text{A} \xrightarrow{\substack{\text{metaphors M1} \\[4pt] \text{Is like}}} \text{B}$$

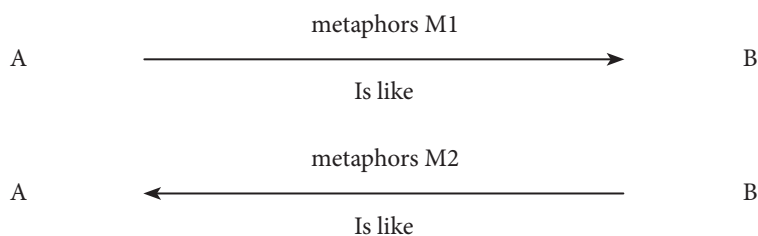$$\text{A} \xleftarrow{\substack{\text{metaphors M2} \\[4pt] \text{Is like}}} \text{B}$$

Figure 4. The direction of the metaphorical process

A high level of generalization is typical both for M2 names and for abstract names, so it is important to maintain a clear line of demarcation between them. The essential feature of a metaphor is that its concepts refer to different subject domains, causing "cognitive collision" and, as a consequence, the emotional effect of a metaphor. In the abstract type, on the contrary, there is a generalization of the object's properties in the system of genus-species relations in which it is initially included.

The classification of the names is more empirical, and demands a rigorous theoretical classification; however, it is possible to identify such dimensions of names as abstract–concrete, semantically close–semantically distant.

With respect to the further development of stimulus images, it should be noted that different types of images evoke different types of responses. For example, the picture of a glass rarely received abstract or complex metaphorical names in our study, whereas the picture with people sitting on a background of blocks received almost no concrete names.

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[1]   Examples of complex metaphors for the second photo are "Loneliness" and "End of Life"; complex metaphors for the third picture are "Islands" (because "the concrete blocks are like islands, people are on the islands, everyone has his own island, together they create a city) and "Lost" ("away from the bustle of people, among the same type of objects").

Table 2. Types of names for the three photographs, N = 38

photo	Type of name				
	Concrete	**Situational**	**Abstract**	**Metaphorical (M1)**	**Metaphorical (M2)**
photo 1	10.5%	9.6%	24.6%	36.0%	17.5%
photo 2	21.1%	43.9%	4.4%	1.8%	28.9%
photo 3	3.5%	33.3%	17.5%	13.2%	32.5%

Results

There were 347 names given to photographs and there were results from three tests: "Conceptual Synthesis" by M.A. Kholodnaya, "Similarities" by D. Wechsler, and "Unusual Uses" by J. P. Guilford (as modified by E. Tunik).

Table 3. Pearson chi-square correlations

	Fluency	**Flexibility**	**Similarity**	**Triads**	**Concrete names**	**Situational names**	**Abstract names**	**Metaphorical names M1**	**Metaphorical names M2**
Fluency	1								
Flexibility	.750**	1							
Similarity	.145	.255	1						
Triads	.193	.010	.032	1					
Concrete names	−.156	−.033	−.171	*−.475***	1				
Situational names	−.155	.066	−.122	−.185	−.192	1			
Abstract names	.012	−.210	−.018	.251	−.253	.076	1		
M1	−.017	.111	.239	−.070	.182	*−.341**	−.253	1	
M2	.221	.021	.074	*.344**	*−.440***	−.508**	−.304	−.281	1

** Correlation is significant at the 0.01 level (2-sides).
* Correlation is significant at the 0.05 level (2-sides.).

A positive correlation was detected between the indicators of "conceptual synthesis" and the number of responses of metaphorical type M2 (r = 0.344, p < 0.05). This means that a higher level of conceptual abilities is associated with a tendency to give complex metaphorical names. By combining words into sentences in a "Conceptual Synthesis", the participant creates a semantic context in which all three distantly related words can be consistently linked in one sentence. The more

complex and indirect the links are, the higher the participant's score. The metaphor also consists of concepts from remote semantic fields. Apparently, in both cases — conceptual abilities and metaphoric abilities — it is important to move long semantic distances while keeping within certain semantic structures. In creating an M2 metaphor, one departs from the concrete characteristics of an object and, on one's own initiative, develops more complex and generalized conclusions. Both tasks require the ability to retain two semantic spaces simultaneously.

One of the most important results was that there was no correlation between conceptual abilities and the creation of perceptual metaphors (M1). Perhaps this is because the creation of perceptual metaphors is based on seeing a direct, surface similarity, whereas in the case of complex metaphors, the respondents create the similarity. Consider two names proposed by different authors for the third photo: "The Staircase" (M1) and "The Beginning" (M2), both based on the same characteristic, the staggered arrangement of the concrete blocks. However, when the photo is named "The Staircase", the author transfers the selected property of the blocks to another object (a staircase), pointing out that the steps are similar to the arrangement of these blocks. In the case of the name "The Beginning", the author explains that the people are sitting on the lowest block, which makes it similar to a beginning and further growth. In the second case, several characteristics of the blocks are generalized and turned into a complex concept, generated by the author with the significant introduction of new semantic content.

So when discussing metaphorical abilities, it is essential to differentiate between different kinds of metaphors, and the psychological mechanisms that produce them.

In addition to the positive correlation between the results of the "Conceptual Synthesis" test and M2 metaphors, a negative correlation was found between these test results and the concrete type of names for photos (r = - 0.475, p < 0.01). Giving concrete names is the most basic way to name the visual image ("entry-level" naming, Kosslyn & Chabris, 1990): The participant translates the observed visual information into verbal language by categorizing the depicted object ("It is a 'Soap Bubble" for the first photo; "It is 'Glass on the Windowsill" for the second photo). We can assume that there is a common tendency to construct one-level and situational links between concepts in two different tasks.

There were no statistically significant correlations between indicators of creativity (flexibility) and production of metaphorical names. However, we do not reject the hypothesis that the capacity for metaphoricity and creativity are linked. Perhaps the problem should be examined further by other methods, which are more sensitive to individual differences. One possible explanation is that creating a metaphor requires not only an ability to create a new frame for the object, but also to create a link (on the basis of similarity) between this object and an object from a remote semantic domain.

There were no statistically significant correlations between the level of generalization and the type of metaphor. After analyzing the stimulus material and answers to the Wechsler test's "Similarities" subtest, we concluded that the test did not show objective differences in the ability to generalize on the part of the participants. Therefore, we do not reject the hypothesis of a relationship of categorical capabilities with the ability to create metaphors.

Conclusion

This paper has proposed an approach to the study of metaphor creation, wherein the stimulus material was presented by visual images and the instructions did not create a mindset prompting participants to come up with metaphorical names. Photographic images proved to be fruitful stimulus materials to investigate the processing of visual information. A preliminary classification of names was developed: 1) concrete; 2) situational; 3) abstract; 4) metaphorical.

Common strategies of information processing were identified as they were manifested in different tasks:

The tendency to create single-level situational connections was manifested in a tendency to give for photos specific names.

The tendency to create highly organized mental structures while retaining the general semantic context, contributed to the creation of complex metaphorical names.

The creation of metaphors did not require the ability to change the context of one object (cognitive flexibility sensu Guilford); it required the ability to establish new connections between two distantly related objects, the readiness to transform the object, and to make a categorical shift in its meaning.

Any metaphor uses emotional and sensory-motor experience. However, respondents created perceptual metaphors directly based upon a material object — a photographic image. Specific details of the image were important in this case and the perception of similarity became the basis of a metaphor. In more complex metaphors (conceptual ones) the author of the metaphor does not point to certain perceptual characteristics of the object, but uses the junction of the perceptual image and the name for creating a new concept which embodies his idea.

By defining different types of metaphors and their different relations to conceptual abilities, we can, on one hand, confirm a differentiation between perceptual metaphors and complex metaphors and, on the other hand, state that it is necessary to differentiate between the psychological mechanisms of creating these types of metaphors.

Limitations

In our study we do not claim to have created a new method. What was important for us was to present a situation in which a person could create a metaphorical name on his own initiative. The next task was to develop a typology of the names. That is why it was important for us to identify the fact that the same types of names were found for all of the stimulus photographs. Further study will be enriched by the development of the stimulus material.

There were no significant correlations between metaphor creation and such cognitive characteristics as flexibility and fluency of thinking, but a definite answer requires more careful selection of diagnostic method. For future studies, we plan not only to define the type of name, but also the quality of the name. As we research the complex mechanism of metaphor creation, more complex statistical approaches will be required.

Acknowledgements

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Pilot study of the influence of a communicator's speech characteristics on a recipient's willingness to maintain interaction in cross-cultural online communication

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The success of cross-cultural online communication in an academic environment is defined by the degree of student involvement in such an interaction. The authors' experience testifies that a number of objective, language, and psychological factors may decrease the activeness of these interactions, and as a result learning may not be effective for students in these types of cross-cultural interactions. Among such factors the current article investigates the influence of a communicator's speech peculiarities on a recipient's willingness to maintain interaction in native-to-nonnative, written online communication in the English language. The study was aimed at verifying a hypothesis about the influence of Russian communicants' speech characteristics on American communicants' willingness to maintain conversations. The research method chosen was content analysis. Thematic chats involving Russian and American students participating in the *Global Understanding* course were analyzed. The results of the content analysis allowed us to distinguish certain Russian communicants' written speech characteristics, such as the prevalence of language and grammar mistakes, the degree of vocabulary richness, and the use of complex sentences. Significant correlations were discovered between the American communicants' willingness to maintain conversations and the number of mistakes, indicators of lexical richness and scarcity in Russian communicants' utterances. Language and speech mistakes as well as the quantity of words in the utterances of micro themes had the highest number of significant correlations with indicators of the willingness to maintain conversations. The first factor, language and speech mistakes, decreased the willingness to maintain conversations, whereas the second factor, the number of words in Russian students' utterances, increased such willingness.

Keywords: intercultural communicative competence, cross-cultural online communication, written communication, language and speech mistakes, willingness to maintain interaction

Introduction

The third generation of Russian Federal State standards for higher professional education include intercultural communicative competencies that correspond to provisions of the *World Declaration on Higher Education for the Twenty-first Century* (World Conference on Higher Education, 1998). The Declaration states that multilingualism should be an integral part of all higher education systems and that intercultural communication is a key requirement for quality higher education in the 21st century. Such competencies include the ability to speak and write in a foreign language in personal and professional intercultural interaction.

The term *communicative competence* was introduced by the American ethnolinguist Dell Hymes (1972). He defined communicative competence as the effective use of a language in various social situations. Taking into consideration the complexity of real communication, Hymes distinguished four components of the communicative competence: linguistic, or language, competence (knowledge of vocabulary and grammar); sociolinguistic competence (knowledge and skills necessary for effective use of the language in a social context); discursive competence (ability to comprehend and logically compose separate utterances in accordance with communication goals); strategic competence (knowledge of communicative support strategies and verbal and nonverbal compensatory strategies).

This notion of communicative competence has been revised. Its current interpretation includes two additional subcompetencies: sociocultural competence (a particular degree of social-context acquisition) and pragmatic, or speech, competence (language use for particular functional objectives in accordance with interaction schemes) (Krasilnikova, 2009; Zaytseva, 2004).

Because communicative competence is realized in particular forms of interpersonal interaction the list of subcompetencies might be expanded to include competencies that reflect the psychological characteristics of communication. According to Andreeva's analytical model of communication (2003), communication includes three components: informative, interactive, and perceptive. The informative aspect, or communication as such, consists of information exchange between interlocutors. The interactive aspect amounts to exchanging knowledge and ideas as well as actions. The perceptive aspect implies perception and mutual understanding between partners. In American and European social psychology, the corresponding term for social perception is *social cognition* (Andreeva, 1999; Bruner, 1974). Similar to Andreeva's (1999, 2003) approach to the structure of communication, our approach singles out two additional components of communicative competence: interactive and socioperceptive components. When applied to situations of cross-cultural communication socioperceptive competence includes skill in adequately assessing interlocutors' psychological characteristics; awareness of the influence of ethnic stereotypes on the assessment of interlocutors; interpretation of and anticipation of the reasons for interlocutor behavior; and awareness of how interlocutors assess their partners in the communication process. Interactive competence is connected with the coordination of actions in the process of communication. Such coordination is realized through the use of social norms existing in the culture; the ability to manage communicative interaction (to initiate conversation, to stress re-

spect for the interlocutor) (Sheina, 2010); and the ability to regulate one's emotional state in order to overcome the language barrier.

The linguistic, sociolinguistic, discursive, strategic, sociocultural, and pragmatic components of intercultural communicative competence are studied by students in Russian universities in two courses: foreign language and foreign language in professional activity. The socioperceptive and interactive components are included in the curricula of such courses as psychology and ethnopsychology. In our opinion, communicative competence as a set of all its components might be developed during interactive classes with native speakers of the English language. Such a form of learning has a number of advantages: knowledge of language use in a particular social context can be expanded; particular difficulties in intercultural communication, which could be discussed with a tutor, can be identified; opportunities for pronunciation correction can be provided; motivation for vocabulary enrichment and further language acquisition can be enhanced; and the opportunity to make one's speech more lexically and grammatically authentic can be provided.

However, Russian universities do not offer such classes as a part of the curriculum. As a result, they are provided in the form of nondegree courses. Examples of such courses are the *Global Understanding* course and the *Global Leadership* course (East Carolina University, Greenville, South Carolina, USA) offered at the Institute of Psychology, Ural State Pedagogical University (Ekaterinburg, Russia) (Chia, Poe, & Yang, 2011). The objective of both courses is to enhance students' intercultural communicative competence by means of involvement in synchronous cross-cultural interaction in English with students from all over the world. The syllabus includes culturally relevant topics such as college life, cultural traditions, family, the meaning of life, and stereotypes and prejudices. Each class session includes live discussion in small video groups and one-to-one keyboard chat.

Because the main objective of the courses is development of students' intercultural communicative competence, it is important to understand what factors might decrease the effectiveness of such interactions. Through our observations of students at Ural State Pedagogical University who were participating in the *Global Understanding* and *Global Leadership* courses, we discovered that a high level of involvement in active intercultural collaboration influences the use of such collaboration for foreign-language learning and culture acquisition. Because interaction is a two-sided process, a decrease in the involvement of one student will influence the involvement of the partner. We hypothesized that a recipient's involvement might be influenced by certain characteristics of the communicator's utterance: specifically, the richness of their content and their correspondence to language and speech norms.

Compliance with language and speech norms means correct language usage, exact information rendered/perceived, and appropriate use of language units in particular communicative situations (Galskova & Gez, 2006). A communicator's compliance with language and speech norms plays a crucial role in intercultural interaction; mistakes in foreign-language use and a communicator's unwillingness to correct them might be a so-called risk factor in cross-cultural communication because mistakes imply misunderstanding between interlocutors (Feshkina, 2009). In linguistics, language norms are traditionally understood as the sum total of the stable manifestations of the language system that have been selected and codified

in public communication—in other words, the sum total of unified language units that are consciously cultivated by the society (Yartseva, 2002). Speech norms are the common use of language units as opposed to their occasional use as codified in dictionaries (Yartseva, 2002). Speech norms regulate the use of particular words and word combinations in speech situations (Vereshchagin, 1969). The corresponding mistakes are distinguished as language mistakes or speech mistakes according to the type of norms. These two language types are considered to have different influences on the effectiveness of cross-cultural communication (Vinogradov, 1983). Language mistakes are thought to be global: they distort the meaning of the utterance. Speech mistakes interfere with authenticity and produce the "incorrectness" effect. To conclude, language and speech mistakes in intercultural communicants' speech might have a different degree of influence on interlocutors' willingness to maintain interaction.

Along with compliance with language and speech norms we also consider informative richness as an important feature of communicators' speech. Informative richness characterizes the content of one's speech, the amount of information that it contains. If speech introduces genuinely new ideas about the subject of conversation, abounds in personal evaluations, and demonstrates the communicator's attitudes, it induces the interlocutor to learn something new (Azimov & Shchukin, 2009; Ladyzhenskaya & Mikhalskaya, 1998). For this reason, we hypothesized that the informative richness of a communicator's speech might influence the recipient's willingness to proceed with the interaction. Informative richness is expressed by the category of lexical richness, which is defined by a speaker's vocabulary and manifests itself in the rare use of words devoid of purposeful communicative intention. The lexical richness coefficient is the correlation between lexemes and the total number of words (Ladyzhenskaya & Mikhalskaya, 1998).

Some ideas about the influence of a communicator's speech characteristics on perception and on the interlocutor's responsive actions have been introduced by researchers in social psychology (Porshnev, 1979). In most cases such research is devoted to nonverbal communication. We suggest that in social psychology verbal communication is viewed as a consciously controlled process: verbal information does not reveal speakers' genuine ideas and intentions if they do not want it to. Some ideas relating to communicants' linguistic and paralinguistic characteristics were introduced by historian and psychologist B. F. Porshnev (1979), who suggested that dialects, speed of speech, and particular sounds of adjacent communities indicate whether an interlocutor represents "the other" and, as a result, whether the communicator should resort to the corresponding interaction strategy. Porshnev also states that deviations in interlocutors' speech might lead to misunderstanding by the recipients. Communicators' unusual characteristics are perceived as "odd" and eventually induce the recipients to protect themselves from unwanted influence. Such characteristics are a different set of phonemes (phonetic misunderstanding), misuse of words (semantic misunderstanding), deviation from grammar structure or logic (syntactic and logical misunderstanding) (Porshnev, 1979).

In studies of the influence of communicants' speech characteristics, the emphasis is usually put on immediate oral communication. However, nowadays written communication is playing a more and more significant role, perhaps because of the

development of information technologies. In chats or with ICQ (instant messaging software) communication is carried out synchronously in real time, so an addresser's words are perceived by an addressee without any delay. As a result, Internet communication becomes interactive and acquires features of oral communication. Written communication is characterized as an oral conversation whose participants have suddenly started expressing their thoughts in a written form (Lutovinova, 2008). We are interested in such features of written online communication as ignorance of spelling rules, use of jargon, lack of participial clauses and of complex sentences with several relative clauses (Lutovinova, 2008). In oral communication these features might serve as an indicator of illiteracy and lack of education and lead to discontinuance of conversation, whereas in written communication they are normative (Lutovinova, 2008). To summarize, speech deviations have a different influence on oral than on written online communication.

Methods

The regularities discussed above are applicable to communicators who are native speakers and use the same language in communication. The current study is focused on native-to-nonnative cross-cultural communication carried out in the English language. The research objective was to investigate the influence of the Russian communicants' speech characteristics on the American communicants' willingness to maintain conversations. The study is exploratory because the scientific literature lacks data on cause-and-effect links between one communicant's speech characteristics and the other communicant's willingness to maintain contact in situations of cross-cultural, written, online interaction.

To verify the hypothesis of a cause-and-effect link between the indicated variables, the content-analysis method was used. We analyzed listings of chats involving Russian students from Ural State Pedagogical University (Ekaterinburg) and American students from East Carolina University (Greenville, South Carolina) participating in a global understanding course. In-class chats were carried out during the spring semester of the 2014–2015 academic year and the fall semester of the 2015–2016 academic year. Topics for discussion in the chats corresponded to the course syllabus. Each chat lasted for about 50 minutes.

A number of categories of content analysis were distinguished for each variable included in the hypothesis. The Russian communicants' speech characteristics were described through such categories as mistakes, lexical richness, and lexical scarcity. The category mistakes included five subcategories: language mistakes, speech mistakes, lexical mistakes, grammar mistakes, and spelling mistakes. Differentiation of language and speech mistakes was based on the scientific data on the various influences of these error types on communication (Kleymyonova, 1991). In addition, we distinguished lexical and grammar mistakes according to the language aspects within the normative-error taxonomy. Spelling mistakes were considered a separate group of mistakes and a unique error type. We included such categories as lexical richness and lexical scarcity in the analysis because communication might also be influenced by factors related to the content of the text (informative richness). Comparative analysis of the categories that describe speech violations and informative richness allowed us to determine whether these factors influenced

communication characteristics equally. The subcategories lexical richness and lexical scarcity reflect the corresponding notions in the scientific literature (Azimov & Shchukin, 2009; Ladyzhenskaya & Mikhalskaya, 1998).

Table 1. Categories of content analysis

Variable	Content-analysis categories
Russian communicants' speech characteristics	1. Mistakes 1a. Language mistakes 1b. Speech mistakes 1c. Lexical mistakes 1d. Grammar mistakes 1e. Spelling mistakes
	2. Lexical richness 2a. Coefficient of lexical richness 2b. Utterances expressing attitudes toward the interlocutors or their words 2c. Number of complex sentences 2d. Ratio of complex sentences to the sum total of sentences in a micro theme 2e. Number of words in the utterances of the micro theme
	3. Lexical scarcity 3a. Repetition of the same word in one sentence 3b. Use of conjugates in one sentence
American communicants' willingness to maintain conversation	1. Qualitative indicators of the willingness to maintain conversations 1a. Monosyllabic reply 1b. Questions (utterances) expanding on the previous reply 1c. Questions (utterances) introducing new information 1d. Utterances expressing attitudes toward the interlocutors or their words
	2. Quantitative indicators of the willingness to maintain conversations 2a. Number of subthemes touched upon in a micro theme 2b. Number of words in the utterances of a micro theme

The American communicants' willingness to maintain conversations was described through a number of qualitative and quantitative categories. Qualitative categories included the absence/presence of a monosyllabic reply, questions (utterances) expanding on the previous reply, questions (utterances) introducing new information that had not been discussed before, utterances expressing attitudes toward the interlocutors or their words. These subcategories were singled out taking into account the speech-behavior strategies typical of American linguaculture (strategies of communicative support and keep-the-conversation-going strategies) (Kuzmenkova & Kuzmenkov, 2013). Quantitative categories included the number

of subthemes touched upon in a micro theme and the number of words in utterances of the micro theme. These subcategories were distinguished according to the manifestations of speech activeness described in the literature on methods of teaching English as a foreign language (Giniatullin, 2008). The complete list of the categories of content analysis is given in Table 1.

Results

Statistical software SPSS 17.0 was used for mathematical and statistical data processing. Thirteen chats were analyzed in all. The content of each chat was divided into separate micro themes. A micro theme is a complex of questions and answers that are semantically united and thematically separated (Pevzner, 2007). The average number of micro themes in a chat was 6 with a dispersion from 2 (the minimum value) to 10 (the maximum value); 76 micro themes were analyzed in all.

The initial stage of data processing included analysis of different types of mistakes made by the Russian students in written, online chats in English. For each micro theme in a chat the number of language, speech, lexical, grammar, and spelling mistakes was recorded (Table 2).

Table 2. Average number of different types of mistakes made by the Russian students in the micro themes of a chat

	Types of mistakes				
	Language	**Speech**	**Lexical**	**Grammar**	**Spelling**
Average number in a micro theme	2.8	0.7	0.7	2.8	1.3

Because the micro themes had different numbers of words, we also calculated the ratio of each error type to the number of words in the utterances of the Russian students. These indicators allowed us to come to more objective conclusions than we otherwise could have about the frequency of the occurrence of each error type. The values of all the indicators were multiplied by 100 so that they can be easily perceived. Thus, Table 3 shows the average number of mistakes of each type that fell in every 100 words in the utterances of the Russian students.

Table 3. Average number of different types of mistakes (per 100 words)

	Types of mistakes				
	Language	**Speech**	**Lexical**	**Grammar**	**Spelling**
Average number in a micro theme (per 100 words)	6.8	1.8	1.6	7.0	2.5

According to Table 3, language and grammar mistakes were numerous in the utterances of the Russian students. Application of the Wilcoxon signed-rank test for

2 related samples revealed statistically significant differences between the number of language and speech mistakes (significance level $p < 0.001$), between the number of lexical and grammar mistakes (significance level $p < 0.001$), and between the number of grammar and spelling mistakes (significance level $p < 0.001$). In addition, students made fewer lexical mistakes than spelling mistakes (significance level $p = 0.02$).

Initially we suggested that an interlocutor's willingness to maintain a conversation might be influenced not only by the correspondence of speech to language and speech norms but also by the informative richness of the text. The use of descriptive statistics allowed us to come to the following conclusions about the informative-richness indicators of the Russian students' utterances. The lexical richness coefficient varied from 0.58 to 1.00. The mean value was 0.77, which is rather high evidence of lexical richness. In 79% of all the cases the Russian students did not use utterances expressing their attitudes to the interlocutors or their words; in 17% of the cases they used 1 utterance in a micro theme, and in 1% of the cases they used 2 utterances in a micro theme. On average students used 3 complex sentences in 2 micro themes. The average ratio of complex sentences to the total number of sentences in a micro theme was 0.3; in other words, there were 3 complex sentences in every 10 sentences. In 21% of the micro themes the students used 1 or more of the same words in each sentence, and they used the same words in each sentence in only 5% of the micro themes.

Table 4. Correlations between the number of mistakes and indicators of interlocutors' willingness to maintain conversations

Types of mistakes made by the Russian communicants	Indicators of the willingness of the American communicants to maintain conversations				
	Questions (utterances) expanding on the previous reply	**Questions (utterances) introducing new information**	**Utterances expressing attitudes toward the interlocutors or their words**	**Number of subthemes touched upon in a micro theme**	**Number of words in the utterances of a micro theme**
	1b	1c	1d	2a	2b
Language mistakes	**0.26** ($p = 0.02$)	**0.22** ($p = 0.06$)	**0.36** ($p = 0.002$)	0.10 ($p = 0.38$)	**0.46** ($p = 0.000$)
Speech mistakes	0.18 ($p = 0.12$)	0.18 ($p = 0.12$)	0.11 ($p = 0.35$)	**0.26** ($p = 0.02$)	0.16 ($p = 0.17$)
Lexical mistakes	0.17 ($p = 0.14$)	0.06 ($p = 0.63$)	0.16 ($p = 0.18$)	0.16 ($p = 0.17$)	0.13 ($p = 0.25$)
Grammar mistakes	**0.27** ($p = 0.02$)	**0.24** ($p = 0.04$)	**0.33** ($p = 0.004$)	0.13 ($p = 0.25$)	**0.47** ($p = 0.000$)
Spelling mistakes	**0.61** ($p = 0.00$)	0.14 ($p = 0.22$)	**0.24** ($p = 0.03$)	0.11 ($p = 0.34$)	**0.40** ($p = 0.000$)

Note. Significant correlations are in bold type.

We can distinguish the following peculiar features of the American students' willingness to maintain conversations. The American students answered with a monosyllabic reply to their interlocutors' utterances in only 10% of the micro themes. In 71% of the micro themes they formulated from 1 to 3 questions expanding on the previous reply; in 51% of the micro themes they asked from 1 to 2 questions (utterances) that introduced new information that had not been discussed before. In 74% of the cases the American students did not use utterances expressing their attitudes toward the interlocutors or their words; in 20% of the cases they used 1 such utterance in a micro theme, and in 6% of the cases they used 2 or 3 such utterances in a micro theme. In 72% of all the cases the American students touched upon 1 subtheme in a micro theme, and in 26% of the cases they touched upon from 2 to 4 subthemes.

To verify the hypothesis about the influence of the Russian communicators' speech peculiarities on the American recipients' willingness to maintain interaction, we carried out correlation analysis. This method allowed us to find significant correlations between variables and to come to conclusions about their influence on one another. To begin, we hypothesized about the correlation between the correspondence of the Russian communicants' speech to language and speech norms and the American communicants' willingness to maintain conversations. The correlation coefficients relating to these variables are given in Table 4.

According to the results of the correlation analysis shown in Table 4, the number of lexical mistakes correlated neither with the qualitative nor with the quantitative indicators of willingness to maintain conversations. In addition, there were weak but statistically significant positive correlations between the number of language, speech, grammar, and spelling mistakes and the qualitative or quantitative indicators of willingness to maintain conversations. The positive values of the correlation coefficients indicate that a more expressed willingness of the American communicants to maintain interaction corresponded to more mistakes by the Russian communicants. This result might be interpreted as support for an interlocutor who is experiencing difficulties in using a foreign language. However, we additionally assumed that positive correlations between mistakes and the willingness to maintain conversations might be caused by the influence of a third variable, which is a common reason for the variability of these two variables (Nasledov, 2008). We thought that perhaps the third variable was the number of words in the Russian communicants' utterances. As additional calculations showed, an increased number of mistakes of all types were found in utterances with more words. In addition, higher qualitative and quantitative indicators of the American communicants' willingness to maintain conversations corresponded to a larger number of words in utterances produced by the Russian communicants.

To verify the hypothesis about the influence of this third variable, we calculated partial correlations between the number of mistakes and the willingness to maintain conversations. As Table 5 shows, different types of mistakes had positive and negative correlations with indicators of the willingness to maintain conversations. An increase in the number of language and grammar mistakes in the Russian communicants' utterances was connected to a decrease in the number of questions (utterances) expanding on the previous reply as well as a decrease in the number of subthemes touched upon in a micro theme. At the same time an increase in the

number of spelling mistakes was connected to an increase in the number of questions (utterances) expanding on the previous reply. An increase in the number of speech and lexical mistakes was connected to an increase in the number of utterances expressing attitudes toward the interlocutors or their words.

Table 5. Correlations between the number of mistakes and indicators of the American interlocutors' willingness to maintain conversations (the number of words in the Russian communicants' utterances is fixed)

Types of mistakes made by the Russian communicants	Indicators of the willingness of the American communicants to maintain conversations				
	Questions (utterances) expanding on the previous reply	Questions (utterances) introducing new information	Utterances expressing attitudes toward the interlocutors or their words	Number of subthemes touched upon in a micro theme	Number of words in utterances of a micro theme
	1b	1c	1d	2a	2b
Language mistakes	**-0.35** ($p = 0.002$)	0.03 ($p = 0.80$)	0.08 ($p = 0.49$)	**-0.32** ($p = 0.006$)	0.14 ($p = 0.24$)
Speech mistakes	0.06 ($p = 0.61$)	0.05 ($p = 0.67$)	**0.30** ($p = 0.01$)	0.06 ($p = 0.60$)	-0.21 ($p = 0.065$)
Lexical mistakes	-0.05 ($p = 0.70$)	-0.03 ($p = 0.79$)	**0.28** ($p = 0.01$)	0.05 ($p = 0.66$)	-0.07 ($p = 0.54$)
Grammar mistakes	**-0.32** ($p = 0.005$)	0.07 ($p = 0.56$)	0.12 ($p = 0.30$)	**-0.33** ($p = 0.004$)	0.08 ($p = 0.51$)
Spelling mistakes	**0.49** ($p = 0.00$)	0.10 ($p = 0.38$)	0.08 ($p = 0.50$)	-0.12 ($p = 0.30$)	0.22 ($p = 0.057$)

Note. Significant correlations are in bold type.

We also verified the hypothesis about significant statistical correlations between indicators of the informative richness of the Russian communicants' utterances and the American interlocutors' willingness to maintain conversations. As Table 6 shows, the lexical-richness coefficient and the expression of attitudes toward the interlocutors were not connected to the willingness to maintain conversations. An increase in the number of complex sentences in the Russian communicants' utterances corresponded to an increase in the American communicants' questions (utterances) introducing new information. Repetition of the same words in a sentence caused a decrease in the number of questions (utterances) expanding on the previous reply and utterances expressing attitudes toward the interlocutors or their words.

To verify the hypothesis about the influence of the Russian communicators' speech characteristics on the American recipients' willingness to maintain interaction, we used multivariate ANOVA. The willingness to maintain conversations was chosen as a dependent variable because indicators of such willingness are con-

nected to one another by significant correlations, as is proved by Bartlett's test of sphericity ($p = 0.000$). We chose as factors language and grammar mistakes (the most frequent ones), the number of complex sentences, and the number of words in utterances of a micro theme produced by the Russian students. The rest of indicators were not included in the analysis because they did not have correlations with indicators of the willingness to maintain conversations or because of small variability. Then we distinguished three scales for the factors enumerated above in accordance with the frequency dispersion of their values. The possibility of multivariate ANOVA use is proved by the results of Box's M test, according to which covariance matrices do not vary significantly ($p = 0.076$). The results of the multivariate stage of the dispersion analysis with the use of Pillai's trace are given in Table 7. The table excludes all data about the interrelations between the factors because they are not statistically significant.

Table 6. Correlations between indicators of informative richness and indicators of the American communicants' willingness to maintain conversations

Indicators of the informative richness of utterances of the Russian communicants	Indicators of the willingness of the American communicants to maintain conversations				
	Questions (utterances) expanding on the previous reply	Questions (utterances) introducing new information	Utterances expressing attitudes toward the interlocutors or their words	Number of subthemes touched upon in a micro theme	Number of words in utterances of a micro theme
	1b	1c	1d	2a	2b
Coefficient of lexical richness	−0.08 ($p = 0.52$)	−0.12 ($p = 0.32$)	0.04 ($p = 0.73$)	−0.19 ($p = 0.11$)	−0.04 ($p = 0.75$)
Utterances expressing attitudes toward the interlocutors or their words	0.12 ($p = 0.32$)	0.19 ($p = 0.10$)	0.05 ($p = 0.69$)	−0.16 ($p = 0.16$)	0.10 ($p = 0.38$)
Number of complex sentences	−0.03 ($p = 0.78$)	**0.24** ($p = 0.035$)	−0.20 ($p = 0.09$)	−0.04 ($p = 0.76$)	0.07 ($p = 0.58$)
Repetition of the same word in one sentence	**−0.34** ($p = 0.003$)	−0.04 ($p = 0.73$)	**−0.26** ($p = 0.02$)	0.20 ($p = 0.08$)	−0.06 ($p = 0.60$)
Number of words in utterances of a micro theme	**0.61** ($p = 0.000$)	**0.28** ($p = 0.013$)	**0.30** ($p = 0.008$)	**0.36** ($p = 0.001$)	**0.57** ($p = 0.000$)

Note. Significant correlations are in bold type.

Table 7. Results of multivariate ANOVA

Factor	Significance
Language mistakes	0.171
Grammar mistakes	0.044
Number of complex sentences	0.715
Number of words in utterances of a micro theme	0.004

Note. Significant correlations are in bold type.

Multivariate ANOVA showed statistically significant results for the influence of the factors grammar mistakes and number of words in utterances of a micro theme ($p < 0.05$) on the willingness to maintain conversations. The results of univariate tests allowed us to determine which components of the multivariate dependent variable were influenced by the indicated factors. An assumption of equal variance should be applied for the univariate stage. According to Levene's test of equal variances, this condition was observed only for these variables: questions (utterances) expanding on the previous reply and number of words in utterances of a micro theme (Table 8).

Table 8. Evaluation of the effects of intergroup factors

Factor	Dependent variables	Significance
Grammar mistakes	Questions (utterances) expanding on the previous reply	0.084
	Number of words in utterances of a micro theme by the American communicants	0.691
Number of words in utterances of a micro theme by the Russian communicants	Questions (utterances) expanding on the previous reply	0.001
	Number of words in utterances of a micro theme by the American communicants	0.006

Note. Significant correlations are in bold type.

Discussion

The current research was aimed at investigating a hypothesis about the influence of the Russian communicants' speech characteristics on the American communicants' willingness to maintain interaction in written online communication. Analysis of the results included not only verification of the main hypothesis but also a description of the Russian communicants' speech peculiarities. While analyzing speech characteristics associated with the correspondence of utterances to language and speech norms, we discovered that the most frequent ones were language and grammar mistakes (on average 6.8 and 7.0 mistakes per 100 words respectively) (Table 3). The high frequency of grammar mistakes was confirmed by the results of linguodidactic research (Feshkina, 2009).

In addition, we carried out a correlation analysis of the variables describing the Russian communicants' speech characteristics and the variables describing the English-speaking communicants' willingness to maintain interaction (Table 5). We discovered that different types of mistakes had multidirectional correlations with the indicators of readiness for dialogue. An increase in language and grammar mistakes in the Russian communicants' utterances was connected to a decrease in such indicators of readiness for dialogue as the number of questions (utterances) expanding on the previous reply and the number of subthemes touched upon in a micro theme. This result corresponds to the scientific data, according to which language and grammar mistakes are considered communicative blunders (Feshkina, 2009; Vereshchagin, 1969; Vinogradov, 1983). Therefore, in comparison with other error types they contribute to a larger extent to risk factors in cross-cultural communication in that they imply misunderstanding between interlocutors (Feshkina, 2009). A decrease in the willingness to maintain a dialogue might be considered a manifestation of misunderstanding one's interlocutor, which interferes with maintaining successful communication.

For other error types the correlation with the indicators of the willingness to maintain interaction was a positive one. An increase in the number of speech and lexical mistakes was connected to an increase in the number of utterances expressing attitudes toward the interlocutors or their words. In linguodidactics and methods of teaching foreign languages, speech mistakes are not considered blunders; they do not distort meaning but produce a certain "accent" (Vereshchagin, 1969; Vinogradov, 1983). For that reason speech and lexical mistakes do not cause misunderstanding. An English-speaking communicant does not have to overcome obstacles to interact. An increase in native speakers' communicative initiatives in this case might be interpreted as the desire to support an interlocutor who is experiencing difficulties in using a foreign language. Different vectors of correlations for various error types might also be viewed as indirect proof of the data on the differential degree of influence of these error types on the communication process (Feshkina, 2009; Vereshchagin, 1969; Vinogradov, 1983).

To verify the main hypothesis, we used multivariate ANOVA. The results of the analysis showed that the American students' willingness to maintain conversations was influenced primarily by two factors: the number of grammar mistakes and the number of words in the utterances of the Russian students. This result proves the significance for maintaining interaction of both aspects of speech utterance: correspondence to language and speech norms (Feshkina, 2009; Vereshchagin, 1969; Vinogradov, 1983) and the informative richness of the text (Azimov & Shchukin, 2009; Ladyzhenskaya & Mikhalskaya, 1998).

The results of the correlation analysis described here allow us to claim the multidirectional influence of these two factors on an interlocutor's willingness to maintain a dialogue. The first factor—the number of grammar mistakes in the Russian communicants' utterances—led to a decrease in their American interlocutors' readiness for dialogue. This result might be interpreted according to both linguodidactics and social psychology. As we have already mentioned, grammar mistakes are associated with gross mistakes in the use of parts of speech and their agreement. For this reason an interlocutor might have difficulty comprehending utterances with grammar mistakes; these mistakes in turn might cause failures in commu-

nication and, as a result, lead to a decrease in an interlocutor's initiative level. Social psychology views communication as closely interrelated to social perception, the perception of one's interlocutor (Andreeva, 2003). If one communicant makes many gross mistakes in speech, then the interlocutor might perceive the communicant as illiterate; this perception can also lead to a decrease in the willingness of the communicant to maintain interaction.

The second factor—the number of words in the utterances of the Russian students—had a reverse influence on interlocutors' willingness to maintain conversations. This factor is a quantitative indicator of the informative richness of utterances. Qualitative indicators of the informative richness of utterances (the coefficient of lexical richness, expression of attitudes toward the interlocutors or their words) proved to be unconnected to the American communicants' willingness to maintain interaction. This result contradicts the scientific data, according to which speech rich in content, which contains a large number of personal evaluations and the communicant's attitude toward the subject of conversation, increases interlocutors' desire to learn more on the topic (Azimov & Shchukin, 2009; Ladyzhenskaya & Mikhalskaya, 1998). Perhaps this result is determined by the peculiarities of the intercultural communication situation. We might assume that initially native speakers do not expect high proficiency in the English language from their interlocutors when they belong to another culture. Because informatively rich speech implies relatively high language proficiency, this characteristic is not included in English-speaking communicants' expectations. The psychological research describes correlations between subjects' expectations and the result of a perception. Thus, informative richness is not be perceived as a significant characteristic of interlocutors' utterances and does not influence their communicative initiative.

The quantitative aspect of informative richness (the number of words in utterances) in written communication is a visual, easily perceived characteristic. Perhaps for this reason the volume of the Russian students' utterances was a decisive factor that had a significant influence on the American students' willingness to maintain interaction. We might suggest that the volume of utterances produced by a communicator is perceived by the recipient as the communicator's interest in the subject of discussion.

Conclusion

The results of the current research confirm the hypothesis about the cause-effect connection between a communicant's speech peculiarities and the other communicant's willingness to maintain interaction in situations of intercultural communication. We distinguished two factors that had the most significant influence on the American communicants' readiness for dialogue. The first factor was the number of grammar mistakes in the Russian communicants' utterances. This factor characterized the correspondence of utterances to language and speech norms. The second factor was the number of words in the Russian students' utterances. This factor is the quantitative indicator of the informative richness of utterances. The influence of qualitative characteristics of informative richness proved to be insignificant.

The influence of both factors on the English-speaking communicants' willingness to maintain interaction was multidirectional. The first factor led to a decrease

in readiness for dialogue whereas the second one caused an increase in such readiness.

To summarize, training participants in intercultural interaction should have two primary objectives: to enhance accuracy in the use of a foreign language and to stimulate speech.

Limitations

The current research was not aimed at investigating cross-cultural communicative differences. For this reason the qualitative pattern of the research participants corresponds not to comparative-approach requirements but to the particular research objective, which was to study conditions for effective intercultural communication in a learning environment. The sample included Russian and American students of different ages majoring in various subjects. The Russian students demonstrated different levels of English-language proficiency. A factor that limited generalization from the research was the small sample (13 Russian students and 13 American students). Thus it is necessary to verify the hypothesis with a larger sample to more confidently draw conclusions about the stability of the discovered regularities.

To apply the results to a wide range of situations of cross-cultural, written, on-line communication it is important to note that, in the current research, interaction was carried out as part of an academic course. Such interaction differs from "natural" communication to a certain extent. First, communicants were limited in the choice of discussion points. This requirement was not strictly controlled by a professor, so students were able to discuss any topics they liked. However, they had a learning goal: to uncover similarities and differences in the area that corresponded to the topic of the class. Second, participants had to maintain interaction during the whole class (about 50 minutes). In natural interaction a communicant can interrupt communication at any time—for example, if the interlocutor is perceived as not very interesting. Therefore, we can conclude that the results of the current research are applicable to written online communication between Russian and American students in a learning environment.

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Eye movement parameters while reading show cognitive processes of structural analysis of written speech

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This paper gives an overview of the published data on eye movement parameters while reading sentences in different languages with both local and global syntactic ambiguity. A locally ambiguous sentence contains a syntactically problematic phrase that leads to only one interpretation, while a globally ambiguous sentence has more than one distinct interpretation. In the first case the ambiguity persists only to the end of the sentence, when it is successfully resolved; in the second case the ambiguity is still present after reading the whole sentence. The obvious difficulty in analyzing the structure of locally and globally ambiguous sentences leads to increased reading time compared with unambiguous sentences. The syntactic ambiguity increases two major parameters: the fixation duration when reading words critical for interpreting the sentence, and the frequency of regressive saccades to reread those words. The reading time for critical words, disambiguating the local ambiguity, depends on the principle of early/late closure (i.e., high/low attachment): preferring a recurrent pattern to associate the critical word with a distant or closer word, respectively (as determined by its position in the sentence), and differs across languages. The first study of eye movement parameters in reading globally syntactic ambiguous sentences in the Russian language is reported in this paper. Our findings open up the prospects of quantitative studies of syntactic disambiguation in Slavonic and Romano-Germanic languages.

Keywords: reading, psycholinguistics, syntactic ambiguity, gaze fixations, regressive saccades, review

Language and linguistic activity, taken in the whole variety of their types (speech, writing, listening, and reading) and being among the most complex forms of higher cognitive functions, have a number of complex physiological and cognitive mechanisms. Consequently, they are the subject of several disciplines, including physiology, psychology and psycholinguistics (Luria, 1975; Leontiev, 1997; Baars, 2007). The founder of generative grammar theory, N. Chomsky, laid down the theoretical foundations for studying cognitive difficulties in communication connected with

linguistic form (or verbal expression). A special type of this broader issue is the problem of the origin of and ways of disambiguating syntactic ambiguity in language.

Reading is a highly complicated linguistic activity, for it is not only a perceptual and a motor but also a cognitive process. At each moment while reading, incoming visual information is continuously recognized and eye movements are prepared and executed; each of these is made up of different stages. The process of reading involves a set of sensory, motor, and mental processes (attention, memory, pattern recognition, decision making) related to the processing of visually perceived words. While reading, the eyes make a series of rapid movements (called saccades), separated by periods of time in which the eyes are relatively still (called fixations). It is only during fixations that the new visual information is encoded from the text, because vision is functionally suppressed during saccades. The process of recognizing signs that comprise morphemes and words occurs during fixations only. As a result, the visual properties of the letters are converted to orthographic and phonological patterns that are further processed into linguistic information that eventually leads to understanding of the text.

The anatomical and functional substrate of these processes constitutes hierarchically organized wide areas of the frontal, temporal, and parietal lobes (Luria, 1975; Vigneau et al., 2006). The contemporary framework for understanding the mechanisms and localization of speech functions is based on neuropsychological (Luria, 1975; Ellis, 2012) and neurophysiological data obtained with functional magnetic resonance imaging (fMRI) (Hagoort, 2005; Hasson & Small, 2008) and evoked potentials (Kutas & Hillyard, 1984; Hagoort et al., 2004; Steinhauer & Connolly, 2008). But neurophysiological methods impose certain limitations on experimental study of reading, since they require that eye movements be eliminated from investigation. Eye movements produce significant artifacts and thereby mask the neuronal signals of the actual speech process. In real life, reading is carried out with the help of eye movements, and in such conditions the processes of motor control are inevitably superimposed on the speech analysis processes, which makes it impossible to separate these effects. However, the parameters of saccades and fixations indirectly represent the brain's linguistic processes because they are closely related to the cognitive functions (attention, memory, letter pattern recognition, decision making) that achieve recognition and comprehension of written language (Clifton et al., 2007). The undeniable advantage of recording eye movement during reading consists in the possibility of tracking the gaze position in real time; therefore, for several decades, eye movement parameters have been widely used to study linguistic processes (Rayner, 1998; Underwood, 2005; Clifton et al., 2007; Rayner et al., 2012).

The recording of eye movements makes it possible to determine the time it takes to read various parts of a text. When associating the time spent on a particular phrase with its linguistic features, it is possible to draw certain conclusions about the physiological and mental processes involved in recognition and comprehension this phrase. The gaze position points at the phrase currently being processed, and the time spent on it manifests the involvement of mental activity. These assumptions have been confirmed by many experiments showing that the linguistic peculiarities of the phrase determine the time spent to read it (Underwood, 2005; Rayner et al., 2006, 2012; Clifton et al., 2007; Rayner, 2009). Thus, eye movement parameters and the mental processes associated with analyzing the currently per-

ceived and processed phrase are assumed to be related to each other, as is supported by a large body of experimental data and experience in psycholinguistic studies (Underwood, 2005; Rayner et al., 2006; Clifton et al., 2007; Rayner, 2009).

The effects of lexical ambiguity on eye movements during reading

Studies in the English language demonstrate that fixation duration while reading certain phrases of a sentence and consequently the total reading time for some particular phrase depend on the lexical properties of the words that present special difficulty for interpretation (Rayner et al., 1977, 2006; Rayner & Duffy, 1986; Clifton et al., 2007; Reichle et al., 2007). For example, while reading the most frequently used nouns in the English vocabulary (more than 100 words/million in the English corpus dictionary, the CELEX English lexical database), fixations are shorter by 25–40 ms than fixations while reading the rare nouns (less than 10 words/million) (Rayner & Duffy, 1986; Rayner et al., 2006; Clifton et al., 2007). Semantic properties of the words (e.g., predictability) also affect the fixation durations. While reading highly plausible words they become shorter by 40 ms and more than fixation durations while reading less plausible words (Rayner et al., 2006; Clifton et al., 2007). Moreover, fixation durations significantly increase when reading semantic anomalies, misspellings, and pseudo-words, compared to the fixation duration of the expected words (Rayner et al., 2006; Clifton et al., 2007). Processing a polysemantic word (lexical ambiguity) also increases reading time (Rayner & Duffy, 1986; Clifton et al., 2007). These results imply that when reading unusual phrases, their linguistic analysis is slowed down in terms of various parameters, because additional mental processes are involved. Higher attention activation and increased load on mnemonic processes inhibit decision making. These processes are represented by electrical activity of the brain such as evoked potentials (Kutas & Hillyard, 1984; Hagoort et al., 2004; Steinhauer & Connolly, 2008) and are correlated with the hemodynamics of certain brain areas as shown by fMRI studies (Hagoort, 2005; Hasson, Small, 2008).

Eye movements in syntactic analysis of locally ambiguous sentences during reading

Structural features and syntactic variables of the sentences also influence eye movement parameters (Rayner, 1998; Clifton et al., 2007), as reported in a substantial number of articles (for a review, see Clifton et al., 2007). The number of fixations, their durations, saccadic amplitudes, and the frequency of regressive saccades (regressions) that are executed during the second path of reading certain phrases, are associated with certain difficulties in interpreting the sentence structure and, therefore, comprehension of the text. In general, different types of syntactic ambiguities slow down the reading of ambiguous sentences compared to unambiguous sentences in different languages (English, Spanish, German, French, and some others) (Frazier & Rayner, 1982; Cuetos & Mitchell, 1988; Schriefers et al., 1995; Frenck-Mestre & Pynte, 1997; Traxler et al., 2002; Staub, 2010).

Two forms of syntactic ambiguity are differentiated in linguistics: local and global ambiguity. Local ambiguity is temporary until it is resolved after reading

the phrase following the critical one; this leads to one distinct interpretation of the processed sentence. The globally ambiguous sentence has two equally possible interpretations. However, most studies of eye movements while reading focus on disambiguation of local syntactic ambiguity (Frazier & Rayner, 1982; Cuetos & Mitchell, 1988; Traxler et al., 2002; Staub, 2010).

Different eye movement parameters clearly represent this disambiguation process. This means that the time for reading the critical words in locally ambiguous sentences is longer than the time for reading functionally analogous word combinations of unambiguous sentences (Frazier & Rayner, 1982; Cuetos & Mitchell, 1988; Staub, 2010). Consider the example of local ambiguity that was discussed in the pioneering work by Frazier and Rayner (1982, p. 179). While reading a clause of the sentence *Since Jay always jogs a mile* (Figure 1) the noun *a mile* is ambiguous. It could be defined as part of either the first or the second clause, and the reader can't choose the model of interpretation. Sentences 1a and 1b give the possible interpretations in a more explicit manner. In sentence 1a, the demonstrative pronoun *this* at the beginning of the second part of the sentence forces the reader to define the word *a mile* as the direct object of the verb *jogs*. In sentence 1b, *a mile* is the subject of the verb *seems* in the second clause and the sentence has another interpretation. The authors gave the subjects 16 pairs of structurally similar sentences to read.

(1) *Since Jay always jogs a mile…*

243   **268**   248
(1a) *Since Jay always jogs a mile (**this**) seems like a short distance to him*
▲_____| **0.30**

245   **283**   267
(1b) *Since Jay always jogs a mile (**seems**) like a very short distance to him*
▲_____| **0.38**

Figure 1. Examples of two sentences with local syntactic ambiguity (Frazier & Rayner, 1982). The numbers above words indicate the average fixation durations (ms) during reading them (ibid., Table 4, p.103). The arrows indicate the regressions for rereading critical words and the numbers nearby indicate frequency of regressions of the total number of sentences (ibid., Table 9, p. 199).

In English, the comprehension of syntactically ambiguous sentences is driven by two very general parsing strategies: *late closure* (*LC*) and *minimal attachment* (Frazier & Rayner, 1982). These strategies are defined as follows:

"*Late closure*: When possible, attach the incoming lexical items into the clause or phrase currently being processed," i.e., the lowest possible nonterminal node dominating the last item analyzed.

"*Minimal attachment*: Attach the incoming material into the phrase-marker being constructed using the fewest nodes consistent with the well-formedness rules of the language," i.e., the principle of least links ("shortest path") between the words.

LC strategy implies that in the phrase *jogs a mile* (Figure 1, sentence 1a) the item currently being processed, *jogs,* is added to the direct object, *a mile*. In other

words, in this case the lowest possible nonterminal node is established; it links the item — *jogs* — and the latest item analyzed — *a mile*. Sentence 1b is an example of an ambiguous sentence with *early closure* (*EC*) or *high attachment,* which is in clear correlation with the already formed patterns, typical for the language being studied.

Fixations during reading the critical words (i.e., disambiguating the local ambiguity) *this* (1a) and *seems* (1b) were found to be on average longer than fixations on the surrounding words. Thus the fixation duration in reading the item *this* (268 ms), solving the target ambiguity in 1a with *LC,* is shorter than the average fixation duration on the item *seems* (283 ms), solving the ambiguity in 1b with *EC*. In addition, the readers sometimes execute regressions to reread some phrases of the sentences. These saccades are often (about 2/3 of their total number) executed by the subjects to return to the critical words *this* (1a) and *seems* (1b) in order to verify interpretation of the sentence. It should be noted that regressions are less frequent when reading sentences with *LC* (0.30), the dominant closure pattern in English, than with *EC* (0.38).

The increased fixation durations while reading the critical words as described by Frazier and Rayner (1982) and supported by other studies (Cuetos & Mitchell, 1988; Staub, 2010; Clifton et al., 2007) are connected with an additional cognitive load, voluntary attention and working memory being involved with interpreting the whole sentence. At the same time, the execution of regressions and additional fixations for rereading an ambiguous phrase signify a reanalysis of the primary sentence interpretation.

The first comparative study of reading similar sentences with local ambiguity was conducted in English and Spanish with native speakers of both languages (Carreiras & Clifton, 1999). However, the eye movement parameters for these languages turned out to be opposite. Fixation durations in reading the critical words in English were shown to rise when subjects were reading sentences with *EC*, whereas in Spanish this phenomenon was shown for reading sentences with *LC*. These results suggest that in Spanish, unlike English, the principle of attachment of lexical units in resolving local ambiguity dominates, namely *EC* or *high attachment*.

Eye movements in syntactic analysis of globally ambiguous sentences during reading

Eye movement parameters in disambiguating global syntactic ambiguity have only been investigated in a few studies, still mostly in English (Traxler et al., 1998; Van Gompel et al., 2001, 2005). A special case of global ambiguity is complex sentences with relative clauses, as in the well-known example: *Someone shot the servant of the actress who was on the balcony* (its equivalent in Russian: *Некто застрелил служанку актрисы, которая стояла на балконе*). In giving the answer to the question *Who stood on the balcony?* the English speakers often chose the second noun (*the actress*) (Cuetos & Mitchell, 1988; Carreiras & Clifton, 1999; Staub, 2010), while Russian speakers chose the first noun (*the servant*) more often (Fedorova & Yanovich, 2004). Otherwise stated, the English readers still prefer the *LC* strategy when interpreting sentences with global ambiguity, as was the case in sentences with local ambiguity (Frazier & Rayner, 1982). Apart from English, the *LC* strategy also prevails in Portuguese (Brazil), Norwegian, Swedish, Finnish, Arabic, and Romanian

(Fodor, 1998). However, in other languages, including Russian the opposite trend is manifested. The *EC* strategy is preferred in French, Greek, Japanese, Spanish, Dutch, German, Polish, Croatian, and Bulgarian (Cuetos & Mitchell, 1988; Sekerina, 1997; Fodor, 1998; Carreiras & Clifton, 1999; Fedorova & Yanovich, 2004).

Traxler and coauthors (Traxler et al., 1998; Van Gompel et al., 2001, 2005) noted that the reading time for complex sentences with relative clauses containing global syntactic ambiguity is shorter compared with local syntactic ambiguity, but is still somewhat longer than the reading time of sentences without any ambiguity. Based on the their results, Traxler and coauthors put forward the hypothesis that global syntactic ambiguity does not induce significant difficulties in comprehending the sentence and its further interpretation is likely to be predetermined. Difficulty in analyzing sentences with global ambiguity as well as those with local ambiguity involves additional mental effort and, consequently, increases the reading time.

Until recently there were no studies of eye movement parameters while reading sentences with global syntactic ambiguity in Slavonic languages. The first study in Russian (Anisimov et al., 2013, 2014) with the original high frequency (250 Hz) eye tracker (Anisimov et al., 2012) was carried out by the authors of the present paper. In our experiments, 28 subjects read 40 complex sentences with feminine relative clauses with global syntactic ambiguity (Figure 2, sentence 2a). To verify our findings, we included 40 similar control sentences, in a random order, without any ambiguity being given to subjects (Figure 2, sentence 2b).

(2a) *В прессе редко упоминали* **о пианистке солистки, которая** *часто выезжала на гастроли.*	(2b) *Студент негромко говорил* **со своей племянницей, которая** *ему не нравилась.*

English translation: *English translation:*

(2a) *The press rarely mentioned* **the pianist of the soloist, who** *often goes on tour.*	(2b) *The student spoke softly* **with his niece, whom** *he did not like.*

Figure 2. Two sentences with global syntactic ambiguity (Anisimov et al., 2013, 2014). All sentences were presented in three lines, the second line (in 2a) containing the global syntactic ambiguity.

We compared eye movement parameters while reading the second line of the syntactically ambiguous sentences (2a) and the control sentences with only one interpretation (2b). All parameters were averaged over all subjects and all sentences. We found significant differences between eye movement parameters while reading ambiguous and control sentences (Table 1). We found a similar effect of ambiguity on all eye movement parameters, as was previously reported for other languages.

As already mentioned, the *EC* principle dominates in Russian, particularly in resolving ambiguity of a sentence with a relative clause (Fodor, 1998; Fedorova & Yanovich, 2004). In our study, the average proportion of *EC* for all sentences was 0.67. A similar proportion of *EC* was also reported for some other languages (Cuetos & Mitchell, 1988; Sekerina, 1997; Fodor, 1998; Carreiras & Clifton, 1999; Fedo-

rova & Yanovich, 2004). According to the studies of global syntactic ambiguity disambiguation in English, the proportion of *LC* is the same 0.67 (Frazier & Rayner, 1982, Carreiras & Clifton, 1999; Clifton et al., 2007).

Table 1. Eye movement parameters in reading second lines in ambiguous and unambiguous sentences (Anisimov et al., 2014).

Parameter	Ambiguous sentences	Unambiguous sentences	*p*
Total reading time, ms	1,393±20 (1,169)	1,195±14 (1,169)	<0.00001
Number of fixations per string	5.29±0.05 (1,169)	4.72±0.04 (1,169)	<0.00001
Frequency of regressions per string	0.60±0.03 (1,169)	0.32±0.02 (1,169)	<0.00001
Fixation durations, ms	207±1 (5,964)	200±1 (5,326)	<0.00001

The data averages (M ± SEM) were calculated for all subjects and all sentences. The size of the sample is given in parentheses. The influence of the type of the sentence with ambiguity levels "ambiguous" and "unambiguous" on all parameters (at the significance level *p*) was evaluated by the ANOVA repeated measures method.

Our results open the perspective of objective comparative study of linguistic processes and their mental counterparts, particularly ways to resolve syntactic ambiguity in Slavonic and Romano-Germanic languages.

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The semantic structure of gratitude

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In the modern social and economic environment of Russia, gratitude might be considered an ambiguous phenomenon. It can have different meaning for a person in different contexts and can manifest itself differently as well (that is, as an expression of sincere feelings or as an element of corruption). In this respect it is topical to investigate the system of meanings and relationships that define the semantic space of gratitude. The goal of the study was the investigation and description of the content and structure of the semantic space of the gratitude phenomenon as well as the determination of male, female, age, and ethnic peculiarities of the expression of gratitude. The objective was achieved by using the semantic differential designed by the authors to investigate attitudes toward gratitude. This investigation was carried out with the participation of 184 respondents (Russians, Tatars, Ukrainians, Jews) living in the Russian Federation, Belarus, Kazakhstan, Tajikistan, Israel, Australia, Canada, and the United Kingdom and identifying themselves as representatives of one of these nationalities. The structural components of gratitude were singled out by means of exploratory factor analysis of the empirical data from the designed semantic differential. Gender, age, and ethnic differences were differentiated by means of Student's *t*-test. Gratitude can be represented by material and nonmaterial forms as well as by actions in response to help given. The empirical data allowed us to design the ethnically nonspecified semantic structure of gratitude. During the elaboration of the differential, semantic universals of gratitude, which constitute its psychosemantic content, were distinguished. Peculiarities of attitudes toward gratitude by those in different age and gender groups were revealed. Differences in the degree of manifestation of components of the psychosemantic structure of gratitude related to ethnic characteristics were not discovered. The semantic universals of gratitude are grouped into the components of its semantic structure: intentional, relational, essential, and expressive. These structural elements are present in the representatives of all the nationalities who participated in the study. The men were more likely than the women to demonstrate the instrumental understanding of gratitude. The women were more likely than the men to reflect humanistic ideas of gratitude. The romantic and noble idea of gratitude was dominant in representatives of the younger generation (18-year-olds). The young adults (19-to-25-year-olds) tended to demonstrate social realism to a larger extent than respondents in the other age groups. In respondents who were 26-years-old and above, humanistic assessment and collectivist values with respect to gratitude significantly decreased.

Keywords: gratitude, culture, sociocultural environment, semantic space, economic environment

Introduction

In the current geopolitical situation, when religion, nationality, and ethnocultural differences of peoples are used as fields and tools for inciting conflicts, the scientific community responds to these adverse but stable trends with an abundance of research. The leitmotif for the research is the aspiration to reveal the genesis, the content, and ways of minimizing ethnocultural, religious, and ethnic conflicts (Agaev, 2013; Erokhin, 2013; Perin, 2003; Ryazanov, 2014; Sampiev, 2010; Shiryakov, 2014; Tengizova, 2014). The specifics of national character and national culture as well as religious/confessional differences and ethnic characteristics are being studied (Bajer, 2014; Belyakova & Grigoryan, 2010; Bryanskaya, 2011; Klimenko, 2011; Muchkaev, 2012; Nadya, 2011; Rakhmatullina, 1999; Ri, 2014). In this article the ethnically nonspecified semantic structure of gratitude as well as peculiarities of the views on gratitude in different age and gender groups are presented. A theoretical framework and practical tools for further research of the gratitude phenomenon are elaborated.

The socioeconomic environment as a semantic space

In anthropology, cultural studies, and social psychology, a subjective semantic space is considered to exist as a system of categories of individual consciousness by means of which a person evaluates and classifies various objects, concepts, and events. It is postulated that, being immersed in a cultural, information, socioeconomic, and political environment, a person creates a system of perception and understanding of the surrounding reality and attitudes toward it (Zhukova, 2010). Internal and external contexts of the system are differentiated. The internal context is defined as specific features of the person's individuality represented at all levels. This individuality is understood as a set of all of one's unique human characteristics as an individual and personality. The external context is viewed as a system of social, sociocultural, socioeconomic, spatial and temporal, political, and other characteristics of the environment in which a person lives. The internal and external contexts in their interaction perform the meaning-forming function of all human life at each level of psychic reflection (Zhukova, 2010) and define a person's behavior and activity on the basis of the principle of the unity of consciousness and activity (Serkin, 2008). As a result the study of everyday ideas about the phenomenon of gratitude under the current economic conditions by means of psychosemantic methods allows us to determine what kind of internal semantic space (system of significations) is formed with respect to gratitude and what kind of stimulating effect it (the system of significations) produces.

Further we will consider here the relationship between the concepts *meaning* and *signification* in the context of psychosemantic methods. One's attitude toward the world's objects, deep structures of subjective experience, is presented in the form of sense relations ("a phenomenon for me," "the meaning of the event for me") (Serkin, 2004). Taking into account individual subjective experience, each person evaluates the meaning of stimuli and defines "meaning for oneself," which is close to the notion of *sense*. In group research, in contrast, the description of a group of motives is introduced and is followed by a statistical grouping of generalized characteristics of intersubjective assessment of the stimulus; this idea is close to the

concept of *signification*. Thus, the notion of *sense* is used in studies of individual subjective experience, while the concept of *signification* is employed in group assessment (Serkin, 2004).

Because this article presents the results of group studies, we will use the notion of *signification*. Signification is understood as a unit that has denotative, operational, and affective-motivational content. This content allows us to consider signification as a unit of psychological analysis that is able to regulate activities and behavior in accordance with defined objectives, motives, and circumstances (Serkin, 2004).

Research objectives

Traditionally, the study of various phenomena in psychosemantics involves a number of stages before a researcher eventually receives the necessary results. For example, investigation of gratitude might include the study of relevant fiction, published journals, and other literature that describes the idea of gratitude; the study of everyday concepts and culturally-determined concepts, including mythological (fairy-tale) ones; and academic ideas and expert assessment (Serkin, 2004, 2008).

Taking into the account the facts mentioned above, we specified the following objectives of the study.

1. Collection of data on everyday notions of gratitude.
2. Identification of both the system of gratitude significations in the modern information and cultural environment regardless of ethnicity and the modeling of representations of the phenomenon of gratitude in people's minds.
3. Definition of the semantic space of the phenomenon of gratitude. Elicitation of the statistically-based structure of gratitude.
4. Determination of male, female, age, and ethnic peculiarities of the expression of gratitude.

Method

To achieve the research objectives, we designed our semantic differential for investigating attitudes toward gratitude. The method had two steps. The first one was to collect data on the everyday ideas of gratitude; the second one was to define semantic universals reflecting the image of gratitude and the modeling of its structure.

Data collection of everyday notions of gratitude

At this stage participants were requested to give free-form answers to the following questions: What is human gratitude? What forms might it have? What content might it have? What expresses gratitude? What is the essence of human gratitude? The answers to the questions were both separate and monosyllabic as well as in the form of mini-essays (coherent speculations).

The selection and surveying of the respondents was random. The respondents were interviewed both in person and in absentia (with the use of online interviews). At this stage the study involved 118 people aged 18 to 56 with an approximately equal ratio of male and female participants of different nationalities and from different social strata.

From the material received (more than 12,000 words and phrases) 642 thematic word-forms were distinguished; they reflected the everyday understanding of gratitude and were different in form, content, and ways of expressing human relations. The procedure included the use of the content analysis software ContPro 6.1, correlation analysis, and analysis of meanings.

Then the forms that were encountered more than once were selected from the 642 word-forms. Sixty word-forms that served as a basis for further study were selected. The frequency distribution of the selected word-forms is characterized as a normal distribution of data.

Definition of semantic universals reflecting views of gratitude and modeling of the structure of gratitude

With the help of the quantile-percentile selection method 18 word-forms with a maximum frequency of occurrence were selected out of the initial 60 word-forms. These 18 word-forms, first, served as an empirical basis for the design of semantic differential representations of gratitude and, second, formed a theoretical model of the structure of the notion of gratitude. The content of the variables grouped in blocks shows the presence of a particular structure and basic components of the phenomenon of gratitude: essential ("Gratitude is ..."); relational (with respect to others) ("Gratitude ..."); expressive ("Gratitude is expressed ..."); intentional (ex-

Characteristics	Evaluation
Gratitude is ...	
experience	1 2 3 4 5 6 7 8 9 10
attitude	1 2 3 4 5 6 7 8 9 10
response	1 2 3 4 5 6 7 8 9 10
expression of warm feelings	1 2 3 4 5 6 7 8 9 10
expression of goodness	1 2 3 4 5 6 7 8 9 10
ordinary life phenomenon	1 2 3 4 5 6 7 8 9 10
acknowledgement for help	1 2 3 4 5 6 7 8 9 10
Gratitude ...	
might be mercenary	1 2 3 4 5 6 7 8 9 10
might be insincere	1 2 3 4 5 6 7 8 9 10
might be sparing	1 2 3 4 5 6 7 8 9 10
has a goal	1 2 3 4 5 6 7 8 9 10
is addressed to particular people	1 2 3 4 5 6 7 8 9 10
Gratitude is expressed ...	
materially	1 2 3 4 5 6 7 8 9 10
by an action	1 2 3 4 5 6 7 8 9 10
by words (is verbalized)	1 2 3 4 5 6 7 8 9 10
One … gratitude	
would like to receive	1 2 3 4 5 6 7 8 9 10
would like to express	1 2 3 4 5 6 7 8 9 10
can measure	1 2 3 4 5 6 7 8 9 10
Your gender	
Your age	
Nationality	

Here is a list of various features and statements that describe the phenomenon of human gratitude.

Evaluate different characteristics of this phenomenon using the 10-point scale. If the characteristic, in your opinion, is minimally represented, it should be given 1 point, if it is represented to the maximum, it should be given 10 points.

The rest of the evaluation also expresses your opinion of the representation of a particular characteristic. It is requested that you circle the corresponding evaluation. **Please, be attentive and fill in all the lines. Thank you!**

Figure 1. Survey for evaluating the characteristics of the semantic differential of gratitude and their representations

pressing intention or direction) ("One … gratitude"). The elaborated semantic differential (Figure 1) was used to define the semantic space of gratitude, to investigate its statistically-determined structure, and to define peculiarities of attitudes toward gratitude in different gender, age, and ethnic groups. At the next stage of the research this model was tested empirically.

At this stage the study involved 206 people. The data were collected by in-person interviews as well as with the use of the Internet. After the elimination of respondents because of incorrect completion of the survey as well as of representatives of those nationalities the quantity sample of which did not allow including them in statistical calculations, the total sample size was 184 people. The study involved citizens of the Russian Federation, Belarus, Kazakhstan, Tajikistan, Israel, Australia, Canada, and the United Kingdom who identified themselves as representatives of one of the nationalities (Table 1).

Table 1. Nationality and age indicators of the sample

Nationality	Sex	Age 18 (youth)	Age 19–25 (adulthood)	Age 26–56 (maturity)	Total
Russian	Male	12	7	47	146
	Female	36	17	27	
Tatars	Male	1	–	1	10
	Female	2	–	6	
Ukrainians	Male	1	1	4	9
	Female	–	1	2	
Jews	Male	–	–	14	19
	Female	–	–	5	
	Σ	52	26	106	184

Results

Analysis of the normality of the data distribution showed normal distribution of categories in each of the groups (differentiated by gender, age, nationality). Internal consistency of the differential, its reliability, and connection of the semantic categories with the assessment of the gratitude phenomenon defined by Cronbach's α amounted to the index $0.75 \div 0.82$ ($\chi^2 = 64.72$, $p < 001$) (the norm is $\alpha = 0.65$), which indicates good reliability of the method and allowed us to use this method for the investigation of gratitude (Stolin, Bodalev, & Avanesov, 2002). Θ-reliability of the differential was 0.72, which also proves its reliability with respect to the diagnostic semantics of gratitude (Stolin, Bodalev, & Avanesov, 2002). Verification of the representativeness of the sample by the splitting method (even-odd) followed by the test of differences by means of Student's t-test (for all 18 universals) showed no difference (by the criterion of sex, age, ethnicity); this result allowed us to extrapolate the results of the sample survey to a large-scale general population (Stolin, Bodalev, & Avanesov, 2002).

Elaboration of the semantic space of gratitude and its statistically-based structure

The model verification was carried out by the factorization method (the method of principal components, a Varimax rotation), and a factor structure was obtained (Tables 2 and 3). The percentage of factor-structure stability was 59%; the norm was 51% (Nasledov, 2004/2012). The stability of individual factors was confirmed by the Lewandowskiy method (Lewandowskiy, 1980).

Table 2. Factor structure of the phenomenon of gratitude and its basic components

Characteristics	Factors			
	1	2	3	4
Would like to receive	0.72			
Ordinary-life phenomenon	0.63			
Response	0.57			
Acknowledgement for help	0.49			0.45
Might be insincere		0.90		
Might be forehanded		0.89		
Might be mercenary		0.85		
Has a goal	0.35	0.54		
Expressed materially		0.42		0.39
Expression of goodness			0.82	
Expression of warm feelings			0.81	
Attitude			0.65	
Expressed by an action				0.75
Expressed by words (is verbalized)				0.66
Would like to express	0.48			0.51
Prp.Total	0.13	0.20	0.13	0.13
Expl.Variance	2.00	2.95	2.00	1.99

Table 3. Verification of the stability of the factors by means of regression analysis

Factors	Parameters			
	R^2	p	$F(1; 15)$	p
1	0.37	< 0.005	10.71	< 0.005
2	0.38	< 0.005	11.70	< 0.005
3	0.42	< 0.03	12.35	< 0.03
4	0.52	< 0.0007	18.15	< 0.0007

Identification of gender, age, and ethnic peculiarities of expressing gratitude

To identify these features the procedure of comparison of individual factor ratings by Student's *t*-test (the values of each factor for each subject) was chosen (Nasledov, 2004/2012). These ratings were obtained during the elaboration of the factor structure discussed previously. The comparison of factor ratings made it possible to determine the quantitative and qualitative expression of each component. It is important to note that in the unipolar factor structure a positive value indicates an intensive expression of quality, while a negative value indicates a less intense expression of quality, but, nevertheless, the quality is present.

Among gender features the difference between the men and the women in the relational and essential components may be noted (Table 4).

Table 4. Differences between the men and the women in the components of gratitude

Components	Mean		*t*	*df*	*p*
	Men	**Women**			
Relational	0.20	−0.16	2.50	183	0.01
Essential	-0.26	0.21	−3.25	183	0.001

Age differences are shown in Table 5 (age gradation corresponds to the gradation by E. Erickson).

Table 5. Age differences in the components of gratitude

Components	Mean		*t*	*df*	*p*
	Age 18 (youth)	**Age 19–25 (adulthood)**			
Intentional	0.28	−0.11	2.09	76	0.04
Components	Mean		*t*	*df*	*p*
	18 (youth)	26–56 (maturity)			
Intentional	0.28	−0.05	2.04	156	0.04
Essential	0.26	−0.23	2.92	156	0.004
Components	Mean		*t*	*df*	*p*
	19–25 (adulthood)	26–56 (maturity)			
Essential	0.32	−0.23	2.49	130	0.01

Differences in the evaluation of gratitude by the criterion of nationality were not found (Table 6).

Table 6. National differences in the components of gratitude

Components	Mean		*t*	*df*	*p*
	Russians	**Tatars**			
Intentional	0.03	0.16	−0.38	155	0.71
Relational	0.01	−0.17	0.56	155	0.58
Essential	0.01	0.22	−0.72	155	0.47
Expressive	−0.11	0.48	−1.87	155	0.08
Components	Mean		*t*	*df*	*p*
	Russians	Ukrainians			
Intentional	0.03	0.06	−0.07	154	0.95
Relational	0.01	−0.41	1.25	154	0.21
Essential	0.01	0.30	−0.93	154	0.35
Expressive	−0.11	−0.49	1.08	154	0.28
Components	Mean		*t*	*df*	*p*
	Russians	Jews			
Intentional	0.03	−0.11	0.6	164	0.55
Relational	0.01	0.31	−1.3	164	0.19
Essential	0.01	−0.48	1.20	164	0.23
Expressive	−0.11	0.71	1.16	164	0.25
Components	Mean		*t*	*df*	*p*
	Tatars	Ukrainians			
Intentional	0.16	0.06	0.20	17	0.84
Relational	−0.17	−0.41	0.41	17	0.69
Essential	0.22	0.30	−0.20	17	0.84
Expressive	0.48	−0.49	2.16	17	0.18
Components	Mean		*t*	*df*	*p*
	Tatars	Jews			
Intentional	0.16	−0.11	0.80	27	0.43
Relational	−0.17	0.31	−1.10	27	0.28
Essential	0.22	−0.48	1.34	27	0.19
Expressive	0.48	0.71	−0.73	27	0.47
Components	Mean		*t*	*df*	*p*
	Jews	Ukrainians			
Intentional	−0.11	0.06	0.41	26	0.68
Relational	0.31	−0.41	−1.58	26	0.13
Essential	−0.48	0.30	1.38	26	0.18
Expressive	0.71	−0.49	−2.08	26	0.10

Discussion

The content interpretation of the factor-analysis results (Table 2) showed the following results.

The first unipolar factor. The main contradiction described in the space of this factor is the desire to receive gratitude from others (society) or the desire to give it back; these desires reflect the social orientation of the individual. Lomov (1984) notes that the orientation of a person is a system-forming function of the person, which manifests itself in the whole system of mental characteristics and conditions of the person: needs, interests, aptitudes, motivational sphere, value orientations, ideals, beliefs, abilities, talents, character, will, and intellectual and emotional features. That is why this factor is called the *intentional component* (from the Latin: *intentio* — value, content, desire, intention, purpose): it reflects the expectations and aspirations of the individual. In the space of the factor we see that a heavy load is carried by the desire to receive gratitude from others; however, the factor of unipolarity makes such a desire not dominant but balanced by opposing or neutral characteristics, so the person's behavior as described by this factor will be determined by the dominant individual motivations.

The second unipolar factor. The main content of this factor is the perception of the sociocultural environment as initially exploiting the individual, as insincere, full not of open human interaction but of the status and role-playing games and manipulation that determine the attitude toward gratitude. That is why this factor is called the *relational component*. The content of the component shows that gratitude is perceived as an exclusively material, physical act, an action, a tool for achieving specific goals. It may be insincere, selfish, sparing; it serves as a means to achieve personal goals. However, the power of expression of the instrumental understanding of gratitude is determined by individual motives too.

The third unipolar factor. This factor reflects the essential understanding of gratitude as an intangible, spiritual, ethical, and moral act of goodness and warmth toward the other. That is why this factor is called the *essential component* (from the Latin: *essentia* — the essence, the deeper meaning and significance).

The fourth unipolar factor. This factor includes variables reflecting the understanding of the form in which gratitude should be expressed. That is why this factor is called the *expressive component*. The variables show that gratitude can be expressed by an act, in words, in any material form and manifestation. In addition, the factor indicates that gratitude can act as a form of need ("It would like to express") and is a manifestation of the support and strengthening of social bonds that are expressed in the form of action in response to another's help.

We see that the elaborated structure of gratitude contains some contradictions. The intentional and relational components are connected to the apparently selfish understanding of human gratitude, which is to obtain something for oneself, to use gratitude as a tool to achieve one's personal goals. The essential component, on the contrary, describes deeply humanized behavior: a kind, gentle, cordial, heartwarming attitude toward the other. The expressive component remains relatively neutral.

Regression analysis of the factors allowed us to clarify the interaction of the components of gratitude. The mutual regression relationship of the intentional and

relational components ($R^2 = 0.38$, $p < 0.007$; F (1; 15) = 10.70, $p < 0.007$) shows that if people tend to receive gratitude from others, they perceive gratitude as a manipulative, selfish, insincere act to a large extent, and vice versa.

The mutual regression relationship of the essential and intentional components ($R^2 = 0.42$, $p < 0.03$; F (1; 15) = 12.35, $p < 0.03$) shows that if people have a humanistic understanding of gratitude, they are more willing to express gratitude to the other, and vice versa.

In other words, having a mercenary, egotistical, or spiritually humanized understanding of gratitude may depend on a person's orientation—toward envy, jealousy, greed, lust for power, selfishness, kindness, humility, tolerance, collectivism.

Analysis of the discovered gender and age differences in expressing gratitude shows the following. The men had a more selfish, instrumental understanding (the relational component) of gratitude, while among the women humanistic representations (the essential component) were revealed to a greater extent (Table 4).

In the representatives of the younger generation (youth) romantic and noble ideas of gratitude dominated. They were oriented toward collectivist values, were ready to express heartwarming feelings and kindness to others and to be unselfish, but they expected a similar attitude to be shown toward themselves (Table 5).

Compared with the youth, the young adults (adulthood) expected to receive gratitude less and were less willing to express it. They considered gratitude as a natural phenomenon of life to a lesser extent; they were more selfish, not oriented toward humanistic, collectivist values. In other words, with age noble and romantic motives are replaced by a more expressed social realism. Such an assessment by the respondents in this category may be the result of the experience of receiving benefits previously unavailable through the act of expressing gratitude—for example, in the form of gifts, souvenirs, or services. However, compared with the mature generation, young adults continued to maintain remnant romantic notions about gratitude. They were oriented toward collectivist values and were ready to express warm feelings and kindness to others.

The older adults (maturity) reflected their longer life path and experience with respect to gratitude. They were not oriented toward collectivist values, and their humanistic assessment of gratitude was significantly reduced.

Differences in the evaluation of gratitude by the criterion of nationality were not found (Table 6). With respect to the research results there is a contradiction relating to the understanding of gratitude as a characteristic of national consciousness/mentality, as a cultural phenomenon defined by national and historical features (Borzheeva, 2008). Apparently, the lack of differences in the degree of manifestation of the components of the psychosemantic structure of gratitude can be explained by the peculiarities of expressing gratitude in different cultures. As Mosejko (2014) states, conventional forms of expressing gratitude and the response to it in the English and Russian languages have largely similar semantics and pragmatics. One can speak about differences in the contexts of realizing gratitude and its interactive models—that is, despite the similarity regarding "why" and "how" gratitude is expressed in the two languages, a significant difference relates to the "who," "whom," "where," and "what for" thanks in these cultures.

Conclusions

1. This study allowed us to distinguish the content and structure of the semantic space of gratitude and to single out its components: intentional, relational, essential, and expressive. These components are present in the representatives of all the nationalities who participated in the study.

2. A direct link between nationality (ethnicity) and manifestations of and ideas about gratitude was not found.

3. Age and gender significantly influenced the idea of gratitude and its manifestations. The women in the study were more likely than the men to reflect humanistic, collectivist ideas of gratitude. **Among** representatives of the younger generation (youth) romantic and noble ideas of gratitude dominated. These romantic notions were replaced with realistic ones among the young and mature adults. Although the young adults (adulthood) shared some romantic notions, these ideas disappeared among the older adults (maturity).

4. In general, a mercenary, egotistical, or spiritually humanized understanding of gratitude depends on the orientation of the individual.

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SOCIAL PSYCHOLOGY

Competitiveness of personality as a psychological phenomenon: The content of the construct and its typology

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Human activity (professional and production-related) occurs within the context of explicit or implicit competition and proves to be more or less productive and creative. Operationalization and measurement of the competitiveness of personality without due regard for personal and situational interactions reduces the content of the notion. Competitiveness requires a high degree of personal energy, flexibility, intelligence, and creativity in regulating activity. However, enlarging the domain of psychological studies has necessitated the study of personality in the context of the natural social situations in which it functions. This structural and functional analysis allows expansion of the description of the phenomenology of the competitiveness of personality as well as classification of the strategies of competitive behavior. In this study competitive-behavior strategies (1,064 critical incidents in professional activities) were analyzed using the Critical Incident Technique and thematic content analysis. To classify the data set, I used two-step cluster analysis as an exploratory method and analyzed the cross-tables of several categorical variables using the log-linear method of model selection. I applied the Solution Tree method for categorical variables to build a dependent-variable hierarchical model with the relevant predictor values. Through analysis of the results of the cluster analysis, the hierarchical model, and the functional and situational analysis of the context, it is possible to single out and validate three types of competitiveness strategies: the dependent, irrational, destructive, short-term strategy (quasi-competitiveness); the dependent, rational, constructive, short-term strategy; and the free, rational, constructive, long-term strategy. Study of the nature of competition and a subject's competitive-behavior strategies is required to analyze, predict, and correct destructive strategies for enhancing performance.

Keywords: competition, competitiveness, subject, activity, competitive behavior, competitive activity, competitive behavior strategies

Introduction

The ability of any state or institution to compete favorably on the world market and to ensure improvement in living standards is particularly relevant in the context of global competition. Factor-based models for evaluating competitiveness (from the International Institute for Management Development and the World Economic Forum) incorporate expert evaluations by top managers and professionals from most countries to describe those competencies that improve national welfare. Recent research proves that competitiveness must be studied not only on the macro- and meso-levels but also on the micro-level (Fatkhutdinov, 2009; Garelli, 2014; Schwab, 2013).

Thus, for instance, the concept of lean manufacturing — in which management pursues the elimination of all types of value-reducing wastes — can be deemed a particular innovation. Lean manufacturing suggests the engagement of each employee in the business-optimization process with maximum focus on the consumer. Jeffrey Liker, who (together with James Womack and Daniel Jones) has researched the Toyota manufacturing experience with the process of waste analysis, has described this type of management as releasing the unrealized creative potential of the workforce (Liker & Meier, 2007).

Competitiveness is definitely a part of competition, and therefore the study of the phenomenon of competitiveness is inseparable from analyzing prevailing trends in understanding the nature of competition; otherwise the result is a reduction of the content of the concept. The notion of competition as a metacategory has been evolving under the influence of psychology and also in a wider cross-disciplinary context; this evolution has enriched its content and has led to stipulation of the sequence of problem-theoretical analysis (Kovalenko, 2013; Shmelyov, 2014a, 2014b).

Competition and personal competitiveness in a cross-disciplinary context: a brief historical foray

Based in natural philosophy perceptions that struggle is the source of everything existing in nature and in society — "War is the father and king of all things, it shows some as gods, some as men, it makes some freemen and others slaves. War is universal" (Heraclitus, trans. 1969, p. 276) — the contemporary cross-disciplinary theory of biodeterminism understands competition as the strife that exists among all (Rubin, 2010).

Competition is inherent in various types of activity in which conflicts of interest occur. Therefore, competitive relations initially required organization, stimulation, and regulation (Aristotle, trans. 1984; Plato, trans. 2002). From the ancient Greeks to the neoclassicists, financial interests were regarded in economics as a basis for competition among workers (Gordeev, 2007).

The understanding of competition as a struggle for existence, the deriving of profit by using the most favorable conditions for the manufacture and sale of products, or an aspiration for matching, as far as possible, the criteria of access to rare benefits is the basis for improving skills and expertise to create and develop innovations in light of the economic model (Hayek, 1979 /1999; Marx, 1885/1978; Schumpeter, 1942/1995). The role of "human nature" came to the fore after competition was introduced as a scientific concept.

In social contract theory T. Hobbes (1651/1991), in describing human nature, maintained that competition was initially inspired by pure egoism — a desire for self-preservation and pleasure. The equality of human abilities gave rise to the equality of hope in attaining one's ends. Therefore, the war of all against all (*bellum omnium contra omnes*) was natural for humans. Hobbes found three principal causes of war — competition, diffidence, and glory.

Reasoning on the basis of the causes of social inequality, J.-J. Rousseau (1755/2004) stressed that competition is based on the universal striving for glory, honors, and distinctions, which induce one to enhance and compare one's abilities and powers.

Claude Helvetius asserted that two sensations — love of pleasure and hatred of pain — produce a third sensation, self-love, whose development gives birth to passions and striving for happiness and personal interests, which are the main motives for social development ("self-love is the only basis on which we can place the foundations of a useful morality"). This idea greatly influenced the thinkers of the 19th century, who emphasized the social aspects of competition (Faminskii, 1987).

The phenomenon of competition has been widely covered by various schools of social theory — utilitarianism (J. Bentham, J. S. Mill, and others), social Darwinism (W. G. Sumner), and H. Spencer's sociology. Proponents of utilitarianism offer a social-activity model in which individuals intentionally pursue their private interests, and society is nothing more than a multitude of individuals brought together to accomplish their own goals. A human being seeks personal benefits, whereas the common good is composed of the aspirations of all people to attain their private interests. The common good is a total of private goods. According to Mill:

> [Competition] may not be the best conceivable stimulus, but it is at present a necessary one, and no one can foresee the time when it will not be indispensable to progress. …To be protected against competition is to be protected in idleness, in mental dullness; to be saved the necessity of being as active and as intelligent as other people. (Mill, 1848/1980, p. 395)

As noted by B. Russell (1945/2010), philosophic radicalism was an intermediate school that gave rise to two other important systems, Darwinism and socialism. The social theories of biological determinism applied the natural-selection principles of C. Darwin to society. We come across a description of social processes from the viewpoint of the struggle for existence and the fitness for survival in the sociology of H. Spencer (he coined the phrase "survival of the fittest"). According to Spencer, social conflict is evolutionary positive because it should eventually lead to a perfect society.

The present-day understanding of competition as an action underpinned by the rivalrous and competitive nature of individual agents (citizens, organizations, social groups, and communities), who are trying both to possess certain resources and to improve their standing against that of others, permits the assertion that competition is an objective law for the development of society; the primary vehicle of competition is the process of pursuing individual needs, and this process guarantees positive changes in the socioeconomic relations of a society (Rokhmistrov, 2000).

Competitiveness is definitely a process of managing advantages. Analysis of the nature of competition in the social sciences confirms the point that competitiveness of personality indicates a potential for rivalry, for struggling for huge benefits and advantages in a certain field; such advantages ensure an individual's survival in the context of social struggle. In the study of competitiveness and the social aspects of competition, the content of the concept of competitiveness of personality has been defined as implementation of a behavioral pattern derived from social attitudes that are based in institutional matrices, which describe integral systems of economic, political, and ideological institutions. Within one type of society competitiveness of personality has been linked primarily to, but is not dependent on, notions of rivalry, prestige, reputation, image; this is the institutional X-matrix prevailing in Russia. Within another type of society competitiveness of personality cannot exist without notions of competition, prestige, reputation, and status; this is the institutional Y-matrix, which prompts an individual to acquire a competitive advantage (Kirdina 2014; Tuktarov, 2007).

The prevailing trends in this cross-disciplinary context have drastically influenced the interpretation of the essence of competition and the description of the phenomenon of competitiveness of personality in psychology.

Interpretation of competition and competitiveness in psychology

Rivalry as a feature of personality

In psychology competition is viewed as a synonym for rivalry in the interrelations of people; it is a state of covert struggles for power, love, prestige, recognition, financial prosperity, implementation of inner potential. As mentioned above, rivalry indeed mobilizes a person's potential and stimulates development. In psychoanalysis rivalry is viewed as influencing character formation and thus as a substantial part of a child's psychosexual development.

Moreover, rivalry may result in aggression or may become pathological and lead to a person's becoming neurotic. In neurotic rivalry, the success, recognition, prestige to be obtained are more essential for the person than the content of the activity. In that case the creative aspect is dominated by the deleterious one (Freud, 1923/1998; Horney, 1937/1993).

Analyzing the conditions of human existence and their alterations in the economic and political spheres starting from the end of the Middle Ages up to the 20th century, Fromm (1946/1994) noted that in the Middle Ages people felt themselves to be an intrinsic part of social and religious communities; they conceived of themselves in reference to these communities before they began to consider themselves as individuals and before they had fully emerged from these groups. In the modern era, when people began to be faced with the task of experiencing themselves as independent entities, their own identity became a problem. In the 18th and 19th centuries the concept of self was narrowed down increasingly; the self was felt to be constituted by the property one had. The formula for this concept of self was "I am what I have, what I possess." Under the influence of the growth of a market economy, the concept of self shifted from meaning "I am what I possess" to "I am as you desire me." People living in a market economy feel themselves to be a commodity. They are divorced from themselves. Their self-interest turns out to be the interest of

the subject who employs them as a commodity that should obtain an optimal price on the personality market. Success depends largely on how well people sell themselves in the market. The economic function of the market in modern society is not solely to set a model for orientation but to be the basis and the main condition for human development within a society Rivalry as a feature of personality is distinguished by a high need for achievement, by ambitions, by competitive behavior in all spheres of life (learning, work, rest, love), and by impatience and a tendency toward aggression when frustrated. Rivalry is a risk factor for psychoemotional distress but has been cultivated by modern civilization (Rean, 2008).

The dichotomous approach in the study of competition: competition-cooperation

Comparing competition with cooperation in social and educational psychology has led to the understanding that competition is destructive, unlike cooperation and teamwork (for instance, cooperative leadership), which constitute a healthy form of interaction leading to positive interpersonal relationships (Andreeva, 2010; Bendas, 2009; Fülöp, 2009).

Cooperation is considered to result in readiness to be helpful, supportive, and respectful; in openness in communication; in trusting and friendly attitudes; in sensitivity to common interests; and in orientation toward enhancing mutual power rather than power differences. In addition, cooperative goal structures facilitate learning and bring about superior performance.

In contrast, competition induces coercion, threats, deception; poor communication; suspicious and hostile attitudes; anxiety; fear of failure; the aspiration to prevent others from winning; self-orientation. Rivalry gives rise to aggression. Conflict as actualized contradiction — a clash of opposed interests, targets, opinions, views of the subjects of interaction or opponents — is the most evident form of competition, and clashes between opponents may lead even to the aspiration to gain a victory over a rival (Fülöp, 2009; Myers, 1983/2000).

However, results of cross-cultural comparisons — the analysis of win/lose situations in competition — prove that competition is not in a dichotomic relationship with cooperation. Cooperation and competition as idealized, separate processes seldom occur in their "pure" state and are not mutually exclusive in the business world. Study of the psychological attitudes and business activity of entrepreneurs in Russia proves that for an entrepreneur competition is not merely based on a concern for economic resources (for deriving profit) but is also a way to gain independence, recognition in society, a good reputation among entrepreneurs, and the ability to implement new projects. Gender-based differences have also been discovered in attitudes toward resource competitiveness. Male entrepreneurs put more emphasis on the ability to risk, whereas female entrepreneurs regard as more valuable the ability to approach people. Through the use of optimal coping strategies in competition-related win/lose situations, fairness, and rule-keeping, the experience of competition can also be a constructive force in life. Combined with competition, cooperation leads to a higher level of performance than cooperation alone and thereby ensures increased competitiveness in economic activity (Bazarov & Shevchenko, 2010; Fülöp, 2009; Zhuravlev & Poznyakov, 2012).

*A problem in the study of competitiveness
of personality in psychology*

In modern research the performance of human activity (production-relatd or professional) is viewed as a consequence of a high level of competitiveness. Cognitive and motivational features (activity, achievement, intelligence, creativity) are substantial personal determinants of competitiveness. Studies in this area regard competitiveness of personality as a set of individual and psychological personality traits that enable one to self-develop in a changing and irregular living environment, to find optimal, humanistic ways to achieve a target, and to be in demand and successful, both personally and professionally. However, competitiveness of personality, which is subject to sociopsychological or individual typological variables, has been described as been isolated unbound variables in the structure of competitiveness of personality (Mitina, 2003; Podosinnikova, 2007; Tokareva, 2007; Zhuravlev & Ushakov, 2009). Behavior acts as a function of the ongoing interaction between a person and a situation; in such interactions psychological notions of the situation appear as substantial determinants. Operationalization and measurement of personal competitiveness outside the personal-situational interaction — outside the competitive environment, outside the social situation in which a person keeps functioning — cause reduction of the content, a "fundamental attribution error" (Burlachuk & Mikhailova, 2002).

I believe that the description of the phenomenon of personal competitiveness can be expanded by functional and situational analysis and by classification of competitive-activity strategies, which is the subject of my study and determines the further course of theoretical analysis, on which the model hypothesis for the study is built.

*Competitive-activity strategies; model hypothesis
for a personality-competitiveness typology*

Theoretical analysis indicates that most activity occurs in the context of explicit or implicit competition. A competing subject actively sets targets and elaborates strategic plans rather than merely responding to changes in the environment. Thus, the independent investigative behavior of a subject is a strategy for counteracting "Trojan horse" teaching, which ensures resource competition between participants in the process of education (Poddiakov, 2006). Analysis of the notion of competition in the context of the psychological metacategories of activity and communication enables the description of competitive behavior (human behavior in a situation of competition or rivalry) and competitive activity as a specific type of a subject's target-oriented activity against an object, which thus satisfies needs. Thus, competition, according to Shmelyov (2014a, 2014b), can be described in the subject-object-subject scheme, wherein each subject seeks to influence a certain object given the presence of other subjects, who are likewise influencing the same object. Psychologically, fair competition is the focus of a subject's attention on his/her own interaction with the object — that is, on the S–O intrinsic link — rather than on the link to the rival (S–S). Unfair competition is reflected in this scheme as destructive subject interaction along the S–S line, to the detriment of productive, substantive activity along the S–O line. A "shift from target to means" is observed in the case

of conscious regulation because the "rival" (a minus-signed means, to some extent) is the element of external conditions specified by the target; the rival serves as an obstacle rather than as a positive means to reach the target. Perceiving a rival as an obstacle (that is, via categorizing the situation as an S–O type) precludes chances for shifting the situation from competition-conflict to competition-cooperation. Nevertheless, subject interaction along the S–S line can also be productive because other subjects are perceived as a plus-signed means for that subject's development, provided that the business organizational culture is characterized by the availability of a competitive environment. In that case competition can be extrinsic (performance-oriented) and intrinsic (aimed at self-development), a situation that helps to substantiate the "the beauty and the beast" paradigm. The beast is extrinsic and performance-oriented motivation, which is connected with striving "to be better, wants to be the best." The beauty is intrinsic and task-oriented/mastery motivation (Bazarov & Shevchenko, 2010; Fülöp, 2009).

Analysis of competitive behavior as an element of the functional and situational method (regulating, differentiating, adopting social roles, evaluating a rival's actions, having an attitude toward a competitive situation as such) enables descriptions of rational and irrational strategies. A rational strategy has a positive valuation because the interaction between those engaged in a competition is guided by certain rules and is accompanied by the assumption of definite roles (involvement in a professional competition, employment, and so on). An irrational strategy, which is reproduced/manifested in the form of various intrigues/acts of sabotage and perfidy, causes mistrust and has a negative valuation because of the competitive interaction of the subjects.

Based on the content of the subject matter of the competition as an element of analysis, the S–O constructive strategy promotes enhanced performance and quality of the work or stimulates mastery development (the S–S constructive strategy). The destructive S–S strategy fails to promote positive changes because a rival or a rival form acts, in various destructive/discriminatory/cataclysmic ways, through various forms of insinuation.

With a rational constructive strategy, an activity, which no matter how well implemented is always externally stimulated, can be deemed as reaching the mastery level, but it exhibits no creativity, as it exerts not even the slightest influence on the stability of the general competitive environment. Study results in the psychology of creativity prove that as soon as a request has been fulfilled, the process of activity development terminates (the stimulus-productive tier). In that case competition is a factor in the intensified enhancement of professionalism and the quality of the work; however, competitiveness of personality has "rational dependence" in the context of a stable competitive environment because competition is a required driver for development, as described in the economic model and the social sciences. Activity that develops at the initiative of the subject reveals new laws for generalization on the special (heuristic) level or the global (creative) level (Bogoyavlenskaya & Klyueva, 2012). Transformation or creation of a new object as the subject matter of competition ensures a level of innovation that permanently outstrips the defined initial conditions of the competition and appears as the basis for a free strategy that ensures responsiveness to the competitive environment (Table 1).

Table 1. Model hypothesis for the study: a personality-competitiveness typology

Elements of the functional and situational analysis	Competitive-activity strategies		
Rivals' behavior	Rational		Irrational
Subject matter of the competition	Constructive		Destructive
Determinacy	Free	Dependent	Dependent
Stability/responsiveness of the competitive environment	Responsiveness of the competitive environment	Stability of the competitive environment	–
Competitiveness type	Rational- constructive, free strategy of competitiveness	Rational-constructive, dependent strategy of competitiveness	Irrational-destructive, dependent strategy, or quasi-competitiveness

Method

Participants

The study was carried out with the involvement of respondents from Moscow, Tver, and Bryansk: students (27%), professionals (33%), entrepreneurs (hired top- and medium-level managers) (40%). The study was conducted in 2009–2014. Participants were recruited from various organizations. A total of 1,064 individuals were approached to participate in the study. Participation was voluntary. Those individuals who agreed to participate were instructed to ask a colleague with whom they interacted and collaborated often at work to participate with them. A total of 1,064 completed questionnaires were collected. The sample consisted of 524 males (49.2%) and 540 females (50.8%). The average age of the participants was 37.9 years (SD = 6.43).

Measures and procedure

The Critical Incident Technique was applied to collect descriptions of competitive behavior, the environment in which the behavior occurred, and its aftermath. The episodes, called "critical incidents," were specific actions that illustrated the success or failure of any aspect of the activity being analyzed in the competitive environment. The Critical Incident Technique involved individual semi-structured interviews, a group discussion, and written questionnaires (Flanagan, 1954; Hettlage & Steinlin, 2006; Serenko, 2006).

Behavioral patterns in the context of competition have been studied and analyzed using thematic content analysis. Based on a theoretical case study, the key elements needed to perform the functional and situational analysis were included and presented in the list of questions for the respondents and as subcategories in the codebook for the content analytical study: subject matter of the competition, behavior of the rivals (behavioral regulations, differentiation and adoption of social roles, evaluation of rival's actions, subject's attitude to a competitive situation as

such, responsiveness and stability of the competitive environment). Respondents' replies to the questions were taken as a measure of the context of the content analytical study. The codebook was developed according to the qualitative research technique (Bogomolova & Stefanenko, 1992). Validation of the method based on the criteria of "volume completeness" and "sense-bearing units content" was achieved using re-coding and expert evaluation and by supplementing the codebook categories with new subcategories at the phase of pilot-text coding. Stability of the data was corroborated by repeated coding of the same document by the same coder and by various coders working under the unified instructions. The data from different codings show an acceptable level of agreement, with divergence no higher than 5% ($rs = 0.5$–0.7, $p < .05$).

Results

To process the outputs we used two-step cluster analysis to explore the natural breakdown of the data set into groups (or clusters), which can hardly be identified as categorical variables without it. The distance measure was calculated using log-likelihood. The best cluster number was automatically determined using IBM SPSS Statistics software (version 20). Figure 1 provides a model summary. The average silhouette measure of cohesion is 1, with good quality of separating four predictors into three clusters.
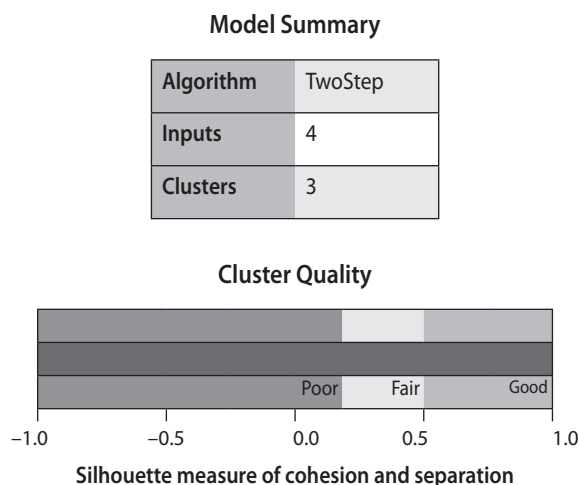
Model Summary

Algorithm	TwoStep
Inputs	4
Clusters	3

Cluster Quality

Figure 1. Model summary and cluster quality

For cluster sizes refer to the circular chart (Figure 2). The smallest cluster size (2nd cluster) is 5%, that of the largest cluster (1st cluster) is 86.6%; the 3rdcluster size is 8.5%. The ratio of largest-to-smallest cluster is 17:38. The cluster model developed brings to light specific features of the separate clusters. The cluster comparison indicates that the factors dependent, rational, constructive, short-term strategy shape the 1st cluster, while the 2nd cluster comprises the factors dependent, irrational, destructive, short-term strategy; the 3rd cluster comprises the factors free, rational, constructive, long-term strategy
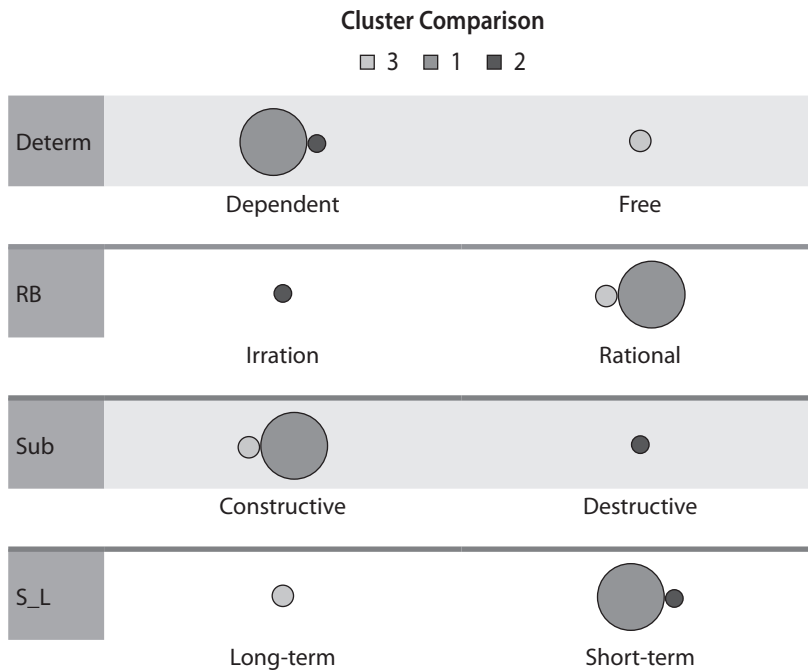
Figure 2. Cluster comparison (Determ — determinacy; RB — rivals' behavior; Sub — subject matter of competition; S_L — short-term/long-term (stability/responsiveness of the competitive environment)

The distance measure based on likelihood suggests that the variables in the cluster model are independent and have multinomial distribution. I applied the log-linear method of model selection to analyze cross-tables of several categorical variables (Nasledov, 2013). By applying the method of backward selection from the saturated model, I obtained an insignificant result for the entire model ($\chi2 = .003$, $p = 1.000$) — that is, the frequencies expected in accordance with the model quite precisely complied with the observed frequencies. This method resulted in formation of a hierarchical model that includes such statistically valid interactions as determinacy * rivals' behavior ($\chi2 = 9.621$, $p = .002$), subject matter of the competition * productivity ($\chi2 = 32.626$, $p = .000$), subject matter of competition * rivals' behavior ($\chi2 = 22.185$, $p = .000$), productivity * rivals' behavior ($\chi2 = 8.259$, $p = .004$). Both the statistically significant differences between frequencies and the moderate and strong relationship between variables were discovered during cross-table analysis ($p < .05$). The categorical variables have defined multinomial distributions ($p < .05$).

To study the statistically valid relationships between a dependent variable and predictors in the form of a hierarchical structure and to classify the values of a dependent variable under the relevant values of predictors, I applied the Solution Tree method for categorical variables. For a model summary see Figure 3. I regard the subject matter of a competition — constructive/destructive strategy — as a dependent variable.
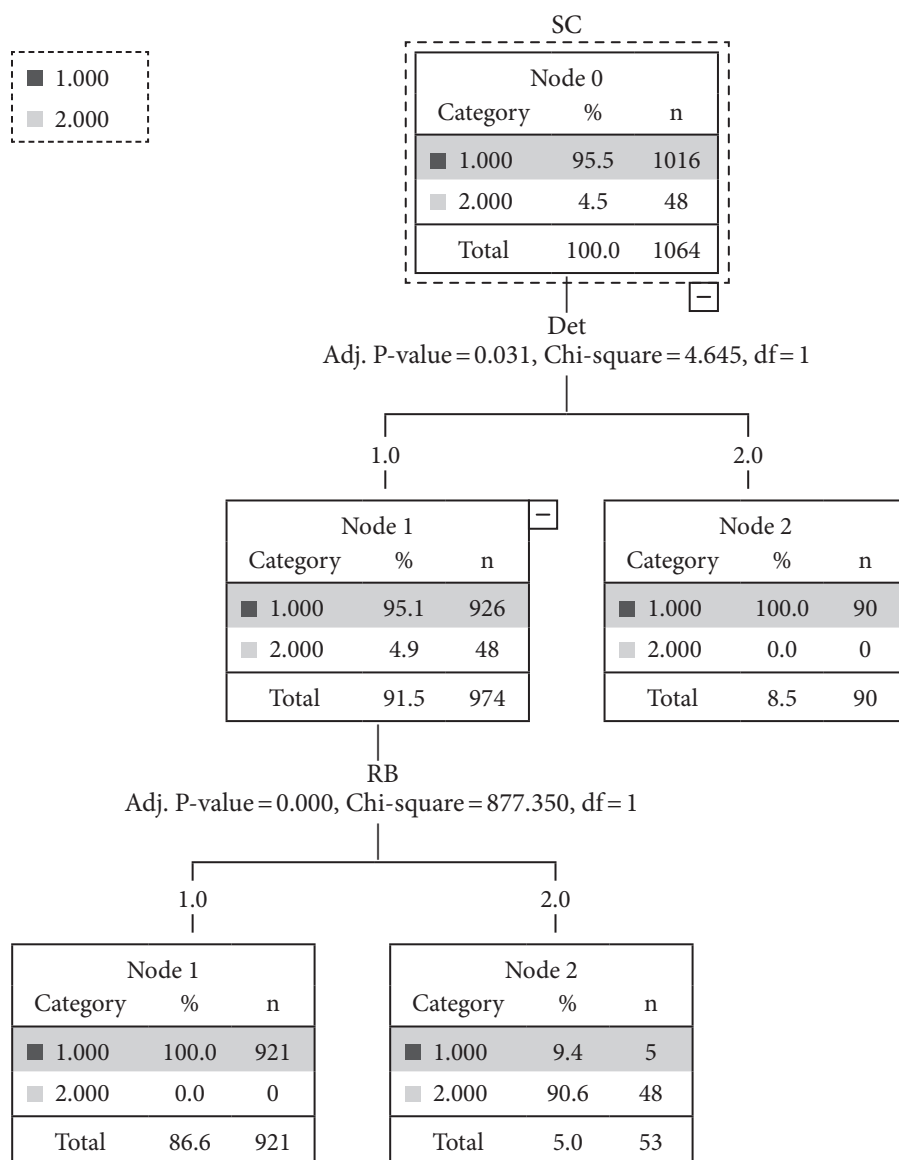
Figure 3. The Solution Tree for categorical variables: SC — subject matter of competition (1 — constructive, 2 — destructive); Det — determinacy (1 — dependent, 2 – free); RB — rivals' behavior (1 — rational, 2 — irrational). The total percentage of correct predictions is 99.5%; risk assessment is 0.005.

The cluster model, the log-linear method, and the Solution Tree help us describe various types (strategies) of competitive behavior: the free, rational, constructive, long-term strategy; the dependent, rational, , constructive, short-term strategy; the dependent, irrational, , destructive, short-term strategy (quasi-competitiveness

Discussion

In 86.6% of cases the respondents presented fair-competition descriptions without artful and perfidious modes/techniques of confrontation/opposition. Competition as a critical incident in professional activity had a positive valuation, and competitive interaction between subjects was guided by certain rules, accompanied by the adoption of definite roles (involvement in a professional competition, employment, and so on); in other words, the subject matter was a rational strategy of competitive behavior. By the subject-matter-of-competition criterion the rational strategy is constructive because the focus of the subject's attention is his/her own interaction with the object — that is, it is on the S–O intrinsic link and thus promotes an improved quality of work. Also presented were descriptions of the productive competitive interaction of subjects along the S–S line, as other subjects were perceived as a means for development; in its turn, such development contributes to intensified staff selection and deployment, the encouragement of development, enhanced professionalism, and changes in an establishment. Thus, competition may be extrinsic and performance motivated, and intrinsic, targeting self-growth (Bazarov & Shevchenko, 2010; Fülöp, 2009; Shmelyov, 2014a, 2014b).

According to the cluster-analysis results, in 91.5% of the critical incidents competition was a determining condition for successfully intensifying staff selection and deployment, thereby enhancing professionalism and the quality of work. In this case of a rational and constructive strategy, activity performance was arbitrarily high but always outwardly stimulated and so can be regarded as mastery but not as creativity; in other words, competitiveness of personality showed "rational dependence" in the context of a stable competitive environment. Regarding the time parameter of the subject matter of the competition, respondents described short-term competitiveness (here-and-now profit, problem-solving in a competitive environment) irrespective of future prospects for activity, image, outward success, and self-promotion.

A competing subject can actively set personal targets and elaborate strategic plans rather than merely responding to changes in the environment. Overall, 8.5% of the critical incidents were classified as free, rational, constructive, with a long-term strategy. Based on their observations, the respondents described cases from their professional activity where the origination and successful introduction of new technologies drastically improved the quality of work and were accompanied by a positive economic effect, but the conversion of the object of the activity as the subject matter of the competition was not caused by the competitive situation but was made on the subject's own initiative; in this case, the conversion of the object outstripped the defined, initial conditions (long-term competitiveness — that is, work for future prospects, brand creation, establishment or subject reputation) and contributed to the responsiveness of the competitive environment (Bogoyavlenskaya & Klyueva, 2012).

The problem analysis indicated that in a competitive environment subject interaction along the S–S line can be destructive, to the detriment of productive, substantive activity along S–O line. The respondents provided descriptions of destructive interactions with other subjects (group conflict, aggressive actions of managers or colleagues toward one person on a team, the creation of unfavorable conditions

for an employee such as cases of horizontal and vertical bullying, and favoritism in employment, career enhancement, and so on regardless of professional qualities). A "shift from target to means" was observed in a case of conscious regulation, as the rival served as an obstacle rather than as a positive means for reaching the target. Perceiving a rival as an obstacle precludes chances to shift the situation toward competition-cooperation (Shmelyov, 2014a, 2014b). Thus, the described competition strategies facilitated singling out such features as irrational, destructive, dependent, short-term (quasi-competitiveness).

In view of the cluster-analysis results of breaking the data set into groups, the results of the Solution Tree method for building a hierarchical model, and the functional and situational analysis of outputs in the context of analytical review, I believe that the model hypothesis of study has been confirmed and enables singling out and validating three types of subjects' competitiveness strategies: type I — dependent, irrational, destructive, short-term (quasi-competitiveness); type II — dependent, rational, constructive, short-term; type III — free, rational, constructive, long-term.

Conclusion

Human activity occurs in the context of competition and proves to be more or less productive and creative. As a consequence, competitiveness requires a high degree of personal energy, flexibility, intelligence, and creativity in activity regulation. However, expanding the domain of psychological studies has necessitated the study of personality in the context of the natural social situations in which it functions. Theoretical analysis of personal competitiveness indicates the need for a subjective, activity-based, and situational approach in describing a subject's competitiveness in the context of a competitive situation or environment. If this approach is not used, there will be a reduction in the content of the notion.

With the help of structural and functional analysis of a series of signs (the focus on a subject; the repertoire of actions, operations, and behaviors; the situational experience; the subjective classification of a situation) I have expanded the description of the phenomenon of personal competitiveness and have classified competitive behavior strategies.

Quasi-competitiveness (a dependent, irrational, destructive, short-term strategy or, in a competitive environment, an interaction along the S–S line) can be destructive and can work to the detriment of productive, substantive activity along the S–O line; it entails mistrust and is given a negative valuation by subjects in competitive interactions.

The dependent, rational, constructive, short-term strategy (in which competitive interaction between members is guided by certain rules and is accompanied by the assumption of definite roles) promotes enhanced performance, improved work quality, and mastery but shows "rational dependence" in competitive a environment, irrespective of future prospects for activity in the context of a stable competitive environment.

Transformation or creation of a new object with positive economic effects as the subject matter of competition resulting from activity development is possible on the initiative of the subject; such creation outstrips the defined initial conditions

and creates responsiveness in the competitive environment, which forms the basis for a free, rational, constructive, long-term competitiveness strategy.

Limitations and future research

Further analysis and study of competitiveness of personality requires taking into account such factors as the stages of human development as a subject of labor, gender differences, and affiliation with a specific professional group. Building competency models subject to further analysis of the data obtained and verifying validity and reliability using a standardized psychological tool will allow comparisons and descriptions of the most significant psychological resources for constructive-rational strategies of personal competitiveness as a subject of labor in order to analyze, predict, and correct destructive strategies for enhancing performance.

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Gender aspects of status in teenage student groups

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Typical male and female roles and relationships can be observed at different social levels: intergroup, intragroup, interpersonal, intrapersonal. In adolescence, increased development of gender characteristics (gender identity, gender stereotypes, gender roles) appears at all levels. Since the leading activity at this age is interpersonal communication, research into gender characteristics and their influence on relations in the student group is one of the most important tasks of modern psychology.

One hundred and forty teenagers in grades 6-8 from secondary schools in Moscow, aged of 12–14, were involved in the research. Special social-psychological techniques were applied for assessment of status relations (sociometry, referentometry, methodology for defining the informal intragroup power structure) and gender characteristics (Bem Sex Role Inventory in classical and modified versions), as well as correlation and cluster analyses.

We found that representations about the group leader contained clear masculine features. We underline the discrepancy between the qualities attributed to the image of the leader and the qualities of the actual group leaders. Thus, the image of the leader includes predominantly masculine characteristics, while actual high-status group members describe themselves with both feminine and gender-neutral features. Finally gender-typed behavior and masculine traits are more typical of low-status teenagers.

Keywords: status group structure, gender identity, gender stereotypes, teenagers

Introduction

Gender identity is a special part of social identity that involves self-awareness in accordance with accepted cultural notions of femininity and masculinity (Kletsina, 2004, p. 359). Gender is a "multi-faceted system of relations that arises and exists in the process of communication and social interaction in a specific socio-cultural space" (Vorontsov, 2008, p. 24). To clarify the concept of "gender," it is useful to apply the three-dimensional model of T. Eckes and H. Trautner (2000), which forms a basis for gender study from a socio-psychological point of view. Each cell of the

matrix proposed by these researchers refers to a specific research problem that arises at the intersection of "a particular content area with a particular construct and level of analysis" (Eckes & Trautner, 2000, p.17). The authors identify the following levels of analysis: individual, interpersonal, group, and cultural. I.S. Kletsina (2004) also describes four levels of gender relations: macro, meso, micro, and intrapersonal. At the micro level, relationships can be identified as a system of "personality– personality." The domain characteristics at this level are gender attitudes that are manifested primarily in the willingness of persons to behave in a certain way in a particular role, according to their sex. The specificity of gender relations can be seen in the distribution of informal roles and power. Taking into account these characteristics, it is possible to study gender characteristics according to features of interpersonal relationships in groups.

Despite the high relevance of research into the relationship of gender characteristics and building relationships in the student group, such studies are rare. In western psychology, studies of gender flexibility in building interpersonal relationships were conducted. Katz and Ksansnick (1994) found that gender flexibility is enhanced during the period of preadolescence to older adolescence. Lobel (2004), on the contrary, showed that older teenagers and young men are prone to discriminate against peers, demonstrating atypical gender behavior, whereas young adults usually do not discriminate. Watterson (2012) studied the flexibility of adolescents and young adults in gender roles for three areas: occupation, personal characteristics, and appearance. The author tried to assess whether the discrepancy is acceptable behavior for men and women in modern society. The results showed that adolescents and especially young men negatively assess violations of stereotypical gender roles, but this can only be applied to occupations. Deviation from stereotyped roles was considered more acceptable in adulthood, but undesirable in childhood and adolescence.

Gender identity begins its development from birth, starting the process of gender socialization that can occur throughout a person's lifetime. In adolescence, a gender identity develops most intensively, as teens pay more attention to femininity and masculinity, try to understand and accept gender roles. Gender stereotypes of the society and of reference groups (e.g., a student group) have a great impact on this process.

Some researchers have confirmed relationships between gender stereotyping and gender identity development, i.e., "gender intensification" (Hill & Lynch, 1983). This approach showed that early adolescence is a period that requires adaptation to puberty, learning new information processes, the new skills that are required for entry into different groups, such as secondary school. Gender intensification is needed to cope with a difficult transitional phase and is a tool of socialization. The process of strengthening of stereotypical male and female roles occurs first of all through interaction with peers, but is also supported by parents.

But some researchers disagree with the gender intensification hypothesis. For example, S.M. Lindberg (2008) found that gender identity development of adolescents is very individual, depends on many factors, and includes gender flexibility. Girls clearly expressed an initial level of femininity, but the femininity of boys and girls did not change between ages 11 and 15. The masculinity of girls and boys is not different and is consistent during adolescence. The author's results confirm the

influence of peers, family, romantic relationships, and the media on the adoption of gender roles. K. Reene's (1994) study examined the influence of cognitive factors on the development of gender identity. It was shown that the level of cognitive development did not determine the development of gender characteristics, as boys and girls showed differences only in the pre-formal level of mental operations. Reene found that at the age of 10, children perceived both male and female traits as inherited and unchangeable. However, closer to age 12, adolescents become familiar with information about how social roles are subject to change. This situation leads to variability in the choice of gender roles, and consequently, to the formation of less gender-typed identity. We agree with this explanation and believe that with the advent of reflection, adolescents evaluate gender-typed behavior, which narrows the repertoire of social roles and does not allow them to fully express their individuality in relationships with significant others.

Thus, gender characteristics in adolescence require further clarification in contemporary socio-cultural conditions. This research is closely intertwined with the study of interpersonal and power relations in the classroom, since teenagers are highly motivated to meet social expectations of the peer group.

During adolescence, an intensification of informal relationships is observed, as well as greater independence from adults, formation of one's own settled opinions, and special perceptions of oneself and others. The desire to find their place in the student group becomes the main motive of behavior in adolescence. The opinions of peers become more important and have greater influence on a teenager's self-esteem than do an adult's (parent's or teacher's) judgments. During adolescence, a person's self-esteem, level of aspiration, and desire for self-affirmation are intensively developing. A student's peer group becomes the immediate environment, and has the greatest influence on the opinions, moral judgments, feelings, and especially important personality traits of a teenager. Given the basic needs of adolescents for individualization, teenagers tend to show all these qualities in interpersonal communication. I.A. Zimnyaya (2008) notes that as teenagers begin to assess the "I", they feel the need to find a good position in the class, while strong emotionality and sharp judgments overthrow the authority of the adult.

Adolescents want to assert themselves, but they also want to be accepted in the group, so they adhere to the standards of behavior, habits, and values, of their reference groups. Thus, in adolescence the processes of individualization and socialization are closely related. The goals of adolescents are determined by group norms, which are used by teenagers to obtain information about the convergence of their behaviors with those of the group.

Teens are often so greatly influenced by peer groups that they compromise their beliefs, if their opinions differ from those of the group. According to A.L. Krupenin and V.A. Petrovsky (1985), in teenage reference groups, adolescents tend to "borrow" from their role models perceptions of a significant situation or person.

The most urgent problems of life for adolescents are those associated with their future relationships with their parents and friends as well as school, free time, personal identity, and relations with the other gender. Adolescent girls pay more attention than boys to their emotional relationships, experience them more intensively.

The relationship between personal characteristics and status in the ~~teen~~ group is manifested more clearly in adolescence. Y.L. Kolominsky (2000) determines that

at this age, high-status students usually have good abilities, even temper, sociability, independence, initiative, and loyalty in friendship. The status becomes higher if the adolescent adapts well to the group, and fits in with its structure. "Unpopular" teenagers do not usually accept group norms, do not feel involved with the class or resist the group's values. According to Z.A. Kireeva (2008), people with low sociometric status have qualities that prevent effective interaction: distrust, behavioral addiction, confrontation, anxiety, aggressiveness, avoidance of warm emotional relationships, irresponsibility.

However, there has not been not enough research on how status in the group shapes the gender characteristics of adolescents. Knowing what qualities of the communication partner are preferable for a particular status, we can understand current trends in the socialization of children and assess their knowledge of the individual "significant others" of the group, and the influence of "gender" on intra-class structure. That defines the purpose of this study: to find the relations between status in student groups and gender characteristics of adolescents.

We formulated the following empirical *hypotheses:*

- There is a correlation between the status of the adolescent in a student group and his or her gender identity.
- Gender-typed behavior is more typical for outsiders than for the other status categories.
- Students attribute more masculine traits to the image of a leader than to themselves.

Method

The research involved 140 teenagers – students in grades 6-8 at secondary schools in Moscow, aged 12 to 14. The research was conducted by the authors during Russian language class and the session lasted 45 minutes. All students in the class were asked to take part in the research, the purpose of which was formulated as follows: "We are interested to know what the atmosphere is like among students in your class and how you imagine the ideal leader of your class". At the beginning there was a short discussion of the definition of "leader", to ensure that all participants were familiar with this idea. All groups were provided with feedback, and the results of the study were presented in a summarized form and discussed with the school psychologist.

Such factors as family situation (complete/incomplete family, economic status), ethnicity, and school performance were not taken into account in the selection of study groups, but it was important for us to know these factors in mixed classes.

For study of the status structure of student groups, we chose the three-factor model of "the significant other" by A.V. Petrovsky (1991), which includes reference to authority, attraction, and power. The study of these factors allows us to determine the integral status of the individual in the group, which is a reflection of the student's favorable or unfavorable position. Complex socio-psychological methods and instructional techniques were applied to determine the status structure of the groups:

Sociometry aims to identify relationships of the type "sympathy–antipathy" and makes it possible to identify the particular emotional (attractive) group structure. Sociometry was conducted in parametric form with a limit of three choices. The instruction to respondents was: "Imagine that your class will be disbanded and new classes will be formed. Who are the students in your class you would most like to be with in a new class? Give no more than three names."

Referentometry determines the significance and the authority of each group member. It was performed in a parametric form with a limit of three choices, immediately after the sociometry measurement. The instruction was: "Mark on the form if you agree or disagree that other group members should be allowed to see your answers." After that, we asked the respondents: "Specify no more than three names of those whose responses to the previous questions you would like to see".

Methodological Procedure for Definition of Informal Intragroup Power Structure in the Contact Community. This technique makes it possible to determine the structure of the informal power system in the group. The survey ranks all the members of the student group based on who plays the main role in group activity and who can make important decisions for the group. The highest positions will be held by those who have these abilities and at the lowest positions will be those who do not influence the group at all.

To study the gender characteristics, the **BSRI** (Bem Sex Role Inventory) in its classical and modified versions was used. The classic version was used to diagnose gender identity and personal preferences. The modified version was changed to assess the qualities of group leaders.

Statistical methods (U Mann-Whitney and chi square, correlation, and cluster analyses) were applied.

Results

Gender identity of students

A correlation analysis was performed to explore the relationship between the adolescent's status in the group and gender identity. As expected, the measured characteristics are correlated ($r = 0.248$; $p \leq 0.01$). As status in the group declines, the percent of students with masculine gender identity increases, while the percent with feminine and androgynous gender identities decreases (Fig. 1). The hypothesis was confirmed: Gender-typed behavior is not correlated with high status in the group, but is more common with low-status group members. This suggests that the quality contained in the category of "masculinity" is less approved in teenage student groups and does not contribute to status. Indeed, some of the "masculine" qualities included in the questionnaire have clearly negative and destructive meanings, for example "aggressiveness", "authoritarianism", "propensity to take risks", and such qualities as "satisfaction of personal interests," "competitiveness", "autonomy", "standing up for one's own position", "tendency to defend one's views," don't suggest a person who will implement common group goals, but rather a more individualistic attitude. In adolescence, belonging to a group, adoption of group norms, and the capacity for empathy are important criteria for positive group status, but these "masculine" qualities are clearly not aimed at those goals.
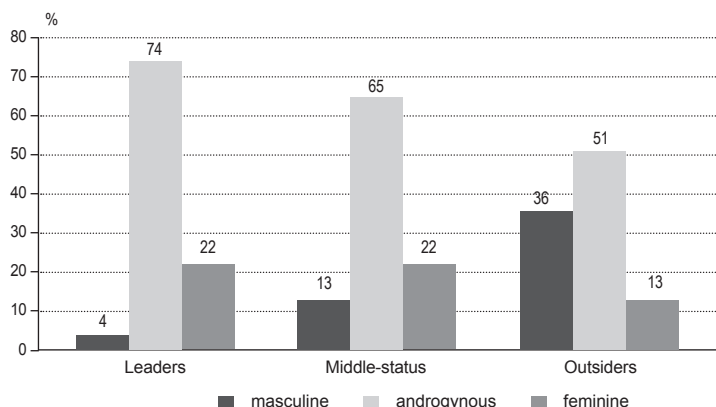
Figure 1. Gender identity of teenagers in different status categories

A set of selected characteristics of the adolescents has significant differences depending on their status in the group ($\chi^2 = 10.533$; $p \leq 0.01$). Leaders and middle-status students select such traits to describe themselves as "sympathetic", "cheerful", "reliable", "eager to soothe hurt feelings", and "loves children". Middle-status teenagers differ from the others by such characteristics as "gentle", "self reliant", and "sincere". "Outsiders" stand out against the others in the greater variability in the responses. They characterize themselves as "masculine", "defends own beliefs", "forceful", "willing to take risks". Low-status teens often have an inappropriate view of themselves, which is reflected in the high ratings they give themselves on the criterion "ability to make friends" (87%) or because they are more concerned with other (non-school) relationships, and the classroom group does not play any significant role for them.

Note that "the ability to lead" was marked by only 33% of adolescents. Moreover, the lower the actual status of the student in the group, the smaller the percentage of leadership skills they find in themselves (in high-status — 41%, in middle status — 36%, in low status — 23%).

Image of the group leader

We estimated the distinctions that were obtained using the BSRI test in the classical and modified versions, the second aiming at an assessment of the image of a group leader. Fig.2 shows that the qualities of the image of the ideal leader of the group tend toward one of the poles (negative in the figure), i.e., toward masculinity, whereas the assessment of their own qualities is more in the middle (androgynous), or tends to the positive pole (feminine). These differences are statistically significant ($U = 5201$; $p \leq 0.01$). This fact is a manifestation of a gender stereotype about the group leader: that the image of the leader includes predominantly masculine characteristics in comparison with self-perception. As confirmation of these results, it should be noted that the characteristic "masculine" was attributed to an image of the leader by 54% of students, while "feminine" only by 13%.

The hierarchical cluster analysis (between-groups linkage, binary data) of qualities chosen by teenagers as inherent in the image of the leader allowed us to identify
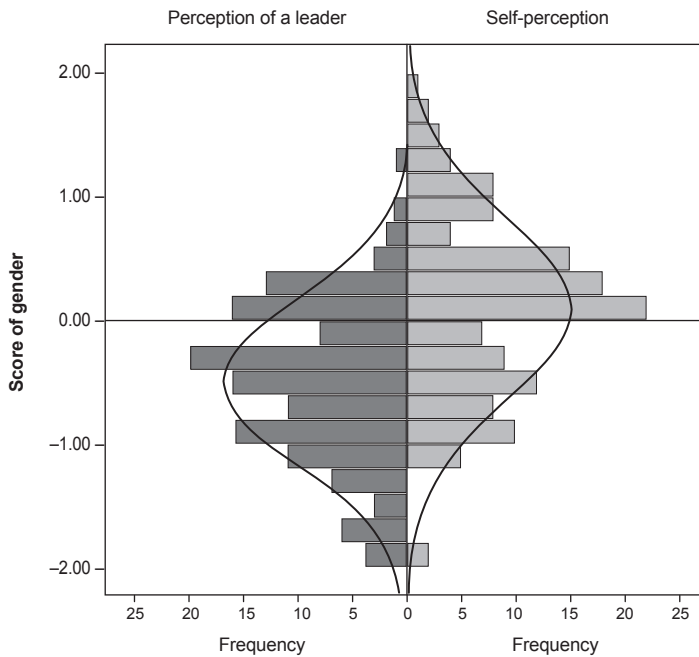
Figure 2. Distribution of coefficients in the BSRI test about the perception of the leader and self perception

10 groups of characteristics (Table 1). The result was that the most frequently selected group (over 80%) includes only the "masculine" qualities ("quick decision-making", "strong personality"), and assumes that the leader is self-confident and active.

Table 1. Results of cluster analysis

No. of group	Qualities	%
1	self-confident, strong personality, ability to lead, quick decision-making	83
2	helpful, sensitive to others' needs, understanding, eager to soothe hurt feelings, friendly, gentle	75
3	lucky, cheerful, reliable, honest	69
4	acts as a leader, adaptable, tactful, ambitious	61
5	defends own beliefs, independent, athletic, assertive, forceful, analytical, willing to take risks, dominant, masculine, individualistic, competitive	59
6	sympathetic, sensitive to others' needs, compassionate, sincere, willing to take a stand	55
7	self-sufficient, solemn, does not use harsh language, conventional	47
8	able to accommodate oneself to the view of others, tender, devoted, warm, soft, credulous	37
9	theatrical, unpredictable, likable	28
10	subject to flattery, feminine, secretive, soft-spoken, unsystematic, frowning, aggressive, infantile, jealous	9

These qualities are not predominant in the actual leaders' assessments of themselves, which highlights the discrepancy between representations of the leader image and the typical characteristics of actual high-status members of student groups. The average value of these qualities in the leaders' assessment of themselves is only 44%. However, other status categories are also not active in the selection of these characteristics: 47% by the middle-status category and 46% by low-status teens. The second preferred the groups of qualities that are mainly «feminine». This refers to the capacity for empathy and mutual assistance, the ability to help and support, to make friends. These features were most pronounced in the middle-status students (75%), which probably can be explained by their potential to be a link between high-status and low-status groups of adolescents, maintaining positive relationships with all group members (Sachkova, 2011, 2014). These qualities were marked by the subjects much less often – 68% by high-status and 65% by low-status adolescents. The next group of qualities includes «gender-neutral» attributes and summarizes the characteristics of 69% of the answers. On the one hand, these are positive emotional characteristics (lucky, cheerful); on the other hand, these are moral basics, which are important in adolescence (reliability and honesty). This group of characteristics is expressed mainly by the high-status students when they evaluate themselves (66%). This value in the category of middle-status students is 59% and in the category of low-status adolescents it is 47%. Thus, the image of the leader is not related to the actual qualities of representatives of the various status categories.

The groups of qualities that have the lowest percentage contain mostly «feminine» characteristics (able to accommodate to the views of others, tender, devoted, warm, soft, credulous) as well as socially disapproved and negative masculine and gender-neutral characteristics («frowning», «aggressive», «infantile», «jealous», etc.). As for the last three groups of qualities, one of them (37%) includes the qualities of passivity, softness, and peacefulness; the second group (28%) consists of qualities that describe visual appeal and artistry; the last group (9%) cannot be combined under a general criterion, but they describe a socially closed personality. It is interesting that this cluster includes «frowning» and «aggressive» together with «feminine».

Conclusion

The study confirmed the hypothesis that there is a relationship between a teenager's status in the student group and gender identity. It was confirmed that the percent of students with a masculine gender identity decreases with the lower status of teenagers, while the number of students with a feminine gender identity increases with this position. The hypothesis that gender-typed behavior is not due to the high status of the individual in the group, but on the contrary, is more common for the low-status category was also confirmed. Masculine gender identity is increasingly common for members of the low- status groups of students. This argues that the qualities that are contained in the category of "masculinity" are less approved in teenage student groups and do not contribute to high status. This can be explained by the aggressiveness and individualistic orientation of certain characteristics that are included in the category of "masculinity". These results refute the gender hy-

pothesis of Hill & Lynch (1983), because strict adherence to prescribed gender roles doesn't guarantee success in adolescence. Moreover most of the respondents in our study have androgynous gender identity.

The characteristics marked by teenagers as inherent to themselves is significantly different in all status categories. High-status and middle-status group members are similar in characteristics such as "the ability to empathize," "vitality", "reliability", "ability to comfort," "love of children." The low-status category differs by greater variability in the responses. For low-status adolescents, such qualities as "courageous", "the tendency to defend their views," "forceful," "propensity to take risks" are more common, which can be a resource to reach a leadership position in other environments.

The study confirmed the hypothesis that adolescents attribute more masculine characteristics to the image of the leader than to themselves. Thus, the gender-stereotyped image of the leader is manifested and is given pronounced masculine qualities. Cluster analysis identified 10 groups of qualities that teenagers attribute to the image of a leader. The first contains only the "masculine" qualities and describes the leader as a self-confident and active personality. The second group consists of "feminine" qualities that describe a person's empathy and assistance to others. The third group includes "gender-neutral" characteristics: a positive emotional state, reliability, and honesty. In general it was found that students attribute more masculine traits to a leader than to themselves. Our results are similar to the findings by T.V. Bendas (2006), who showed that gender-stereotyping of leadership could be seen only in respondents' answers but not in real life.

In practice, teachers and psychologists need to integrate gender aspects of status relations and role interactions of adolescents. Resolution of the contradiction between the image of the leader and the qualities of the actual group leader contributes to the development of positive interpersonal relations, group cohesion, reflection, and understanding in interpersonal relations, which is especially important during adolescence. In further studies, we plan to explore the representations of adolescents about outsiders in different types of groups. This will not only probe the causes of a low-status position, but also will open up new areas of corrective and developmental work with teenagers who are in an unfavorable social-psychological situation and will show how they can be socialized in the group and society. Such significant factors as ethnicity and family status should be taken into account.

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