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DEVELOPMENT OF PHENOTYPICAL INDIVIDUALIZATION OF THE PERSON SOCIAL ACTIVITY CRITERIA AND INDICATORS

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Social activity being one of the main elements of organization of human vital activity, is characterized by systemic principle of formation and individuality of manifestations. Recognizing importance of the role of factors of social nature in development of social activity of an individual, one should agree that individual specialness of behavior largely depends on phenotypically determined psychophysiological and psychological features of an individual. *Aim.* The aim of research was to develop criteria and parameters of phenotypic individualization of social activity of a person. *Materials and Methods.* Into the study 146 individuals, males and females of 18-23 years of age were included. As the main criteria of psychophysiological and socio-psychological typologization of expressiveness and direction of social activity of an individual 2 groups of respective traits were used: impulsivity - initiative - passivity, and prosociality - social neutrality - asociality. *Results.* The conducted experimental study permitted to correlate the device-detectable levels of the general nonspecific reactivity of an organism with the extent of expressiveness of social activity in human behavior. Here, a high level of general nonspecific reactivity was associated with inclination to impulsive behavior, a low level was associated with passive behavior, and the medium level of the general nonspecific reactivity of an organism was associated with inclination to initiative behavior. A method of qualitative differentiation and quantitative assessment of the individual prosociality-asociality balance in human behavior has been developed and tested. In order to technologize the process of complex evaluation of the expression and orientation of social behavior, a matrix of social activity of an individual has been developed that integrally characterizes the psychophysiological and psychological potential of an individual. *Conclusion.* The results of the study made it possible to specify the criteria and parameters of the phenotypical individualization of the social activity of an individual. The proposed method for assessment of the social activity of an individual provides a complex consideration of the physiological and psychological factors of the "sociality" of behavior, the possibility of qualitative typologization and quantitative determination of the individual prosociality-asociality balance, as well as algorithmization of the testing process.

Keywords: social activity, phenotypic traits, psychophysiological status, general nonspecific reactivity of an organism.

Social activity, being one of the basic elements of the organization of human activity, is based on systemic principle of its formation and individuality of manifestation. The key factors in development of social activity of an individual in the ontogenesis are social and biological components. The proper social constituent of formation of the social activity primarily concerns the normative sphere of human behavior. This aspect is highly important for development of regimented behavior responsible for social and cultural continuity of generations. Individual specificity of manifestation of social activity in life of a person should be considered, firstly, as a measure of involvement of an individual into the sphere of social relations, and, secondly, as a genetically determined and phenotypically adapted in the ontogenesis property predetermining the attitude of an individual to social medium and manifested by multiple complicated forms of his/her behavior. In research work of V.A. Kupriyanov, significance of complex influence of biological factors on formation of the social activity of an individual is determined on the basis of the philosophical principles of unity, systematicity and development. The integrity of the socio-biological systems and the unity of biological and social aspects in an individual are substantiated [1]. Recognizing the role of social factors in development of social activity of an individual, it should be acknowledged that individual uniqueness of behavior to a large extent depends on the phenotypically determined psychophysiological and psychological qualities of personality. The basis of social activity of a personality is determined by individual demands of a person [2,3]. It should be remembered that, according to the concept of Maslow, the condition for formation of ideal and social demands is the primary satisfaction of the physiological demands [4]. Physiological demands in turn are highly individualized and depend both on the strictly biological, genetically determined conditions, and on the number of phenotypic characteristics established in the ontogenesis of an individual. This factor, in combination with the individual specificity of formation of social and ideal demands, predetermines a

great number of combinations of behavioral manifestation of social activity. Here, expressiveness and direction of the social activity, taking into account the infinite diversity of individual combinations of realization of different-level demands, should be doubtlessly determined by stable combinations of phenotypic traits that form the psychological type of an individual. Analyzing the modern status of the studied question, one should acknowledge lack of the integral concepts of phenotypic individualization of the social activity of an individual.

The given situation justifies reasonability of search of new phenotypic traits integrally reflecting endogenous potential of a human in terms of specificity and expressiveness of social activity. On the basis of the earlier experimental research, the integrative criterion of assessment of the functional condition of an individual was developed – the level of general non-specific reactivity that qualitatively characterizes and quantitatively reflects the extent of individual sensitivity of an organism to different exogenous influences. There are distinguished three levels of general non-specific reactivity of an organism (LGNSRO): high, medium, low. A possibility of instrumental assessment of LGNSRO on the basis of the thermal sensitivity threshold (TST) was substantiated. Morphofunctional characteristics of certain structures of the brain and their role in formation of LGNSRO were determined. The undertaken biometrical analysis of nociceptive characteristics of an organism showed the general biological character of normal distribution of TST in populations of humans and laboratory animals. The genetic determination of phenotypic manifestations of LGNSRO was proved [5,6]. It should be suggested that use of LGNSRO as a criterion of assessment of psychophysiological status of an organism, in combination with the results of psychophysiological testing, will permit complex consideration of potential of social activity of an individual.

The aim of research was to develop criteria and parameters of phenotypic individuality of social activity of an individual.

Materials and Methods

The first, theoretical, stage was dedicated to generalization of the existing approach

ches to differentiation and typologization of behavioral manifestations of social behavior of an individual. As sources of information electronic bases e-library, Cyberlenink, Archive of scientific journals Neicon, Scopus, Web of Science, Pub Med were used.

At the second, experimental, stage of work interrelations between phenotypic traits and parameters of social activity of an individual were studied. In the study 146 individuals participated of both gender of 18-23 years of age, students of Volgograd State University. The work was conducted with the written informed content of participants with observance of the regulations of the Universal Declaration on Bioethics and Human Rights in part of articles 5, 6 and 7. In all participants LGNSRO was determined. Assessment of LGNSRO was based on detection of the time of exposure to IR radiation producing the threshold nociceptive effect on skin of the rear surface of the distal phalanx of middle finger using a small-sized Ugo Basile algesimetr (Italy). At the moment of reflex withdrawal of the wrist from the thermal stimulus, the time in seconds corresponding to TST was fixed in the automatic mode. Qualitative differentiation of LGNSRO was based on the following limits of the TST: high LGNSRO – 0.5-15.4 s, medium LGNSRO – 15.5-30.4 s, low LGNSRO – 30.5-45.5 s [5]. Communicative impulsivity, neuro-psychic reactivity, extraversion, neurotism, accentuations of temperament and of personality traits were evaluated in standard paper tests [7-9].

For statistical processing of results programs Statistica 6.0 (StatSoft Inc., USA), MS Excel 2007 (12.0.6611.1000) (Microsoft) were used. Statistical significance of differences between arithmetic mean values of the studied parameters was evaluated using Student t-test.

The third, analytical, stage of study was directed at systematization of interrelations between psychophysiological and sociopsychological parameters of behavioral activity and at the subsequent elaboration of the method of complex assessment of the social behavior of an individual.

Results and Discussion

The primary analysis of the social activity phenomenon revealed a number of theoretical moments that principally determined the subsequent procedure of study. At first it was required to specify the concept “social activity” since this term has many definitions that predetermine its application field. From the point of view of behavioral approach, the following basic principles of social activity were singled out: evolutionism, individuality, social priority and social demand. Here, at the level of individual development social activity may be presented in two parameters: as a measure of activity that determines the extent of involvement of an individual into the system of social relations, and as a genetically determined and phenotypically fixed property realized in complex forms of social behavior. Thus, it may be stated that actually realized behavioral and social activity is a direct manifestation of the vital activity of an individual and first of all depends on the individual organization of his/her functional and psychophysiological status. For maximal concretization of the initial elements of formation of stable forms of social behavior, a set of the basic human personal traits was defined: activity, reactivity, passivity, aggressiveness, affectivity, impulsivity, adaptiveness, anxiety, tolerance, altruism, friendliness, empathy, confidence, conscience, communicability, conformism, skepticism, nihilism, intolerance. The complex characteristics of the above properties permits to distinguish two block of the main criteria of typologization of the social activity of a human. The first block suggests typologization of social activity of an individual by the following criteria: impulsiveness – initiative – passivity. The second block – by the following criteria: prosociality – social neutrality – asociality. The double characteristics of the combination of criteria of the extent of expressiveness of activity and its qualitative social constituent permits to single out nine types of social behavior: impulsive-prosocial; impulsive-socially neutral; impulsive-asocial; initiative-prosocial; initiative-socially neutral; initiative-asocial, passive-prosocial; passive-socially neutral; passive-asocial (Fig. 1).

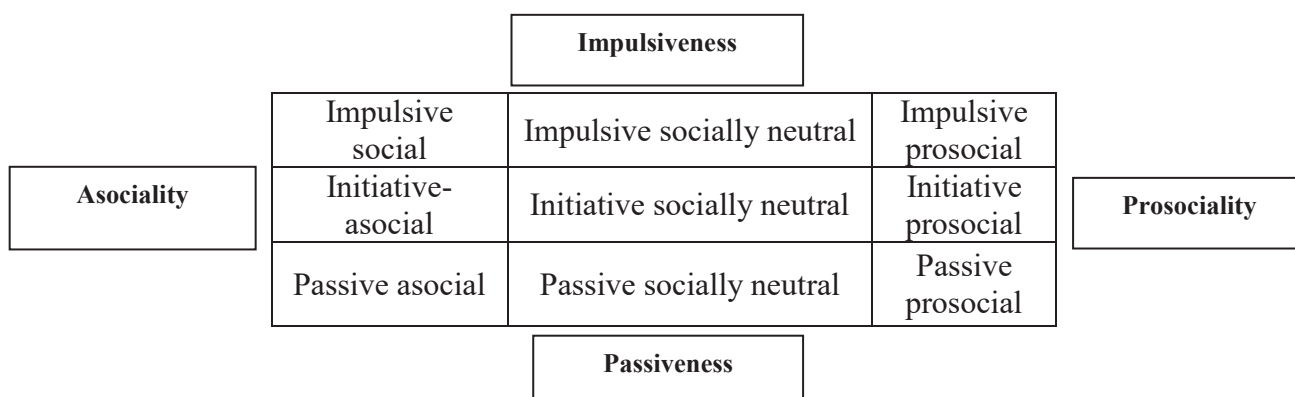


Fig. 1. Typologization of social behavior of an individual

To study the possibility of using LGNSRO as a criterion of psychophysiological assessment of the social component of behavioral expressiveness of impulsiveness, initiative and passiveness, the following experimental study was undertaken. From students of the Volgograd State University of 18-23 years of age three groups were formed; with high, medium and low level of LGNSRO. Each group included 16 individuals (8 men

and 8 women) in whom expressiveness of extraversion, neurotism, neuro-psyhic reactivity and of communicative impulsiveness which reliably characterize inclination of an individual to impulsive phenomenon, were simultaneously determined by standard paper tests. The results of study showed that individuals with high LGNSRO show maximal values of the analyzed parameters, and those with low LGNSRO show minimal values (Fig. 2).

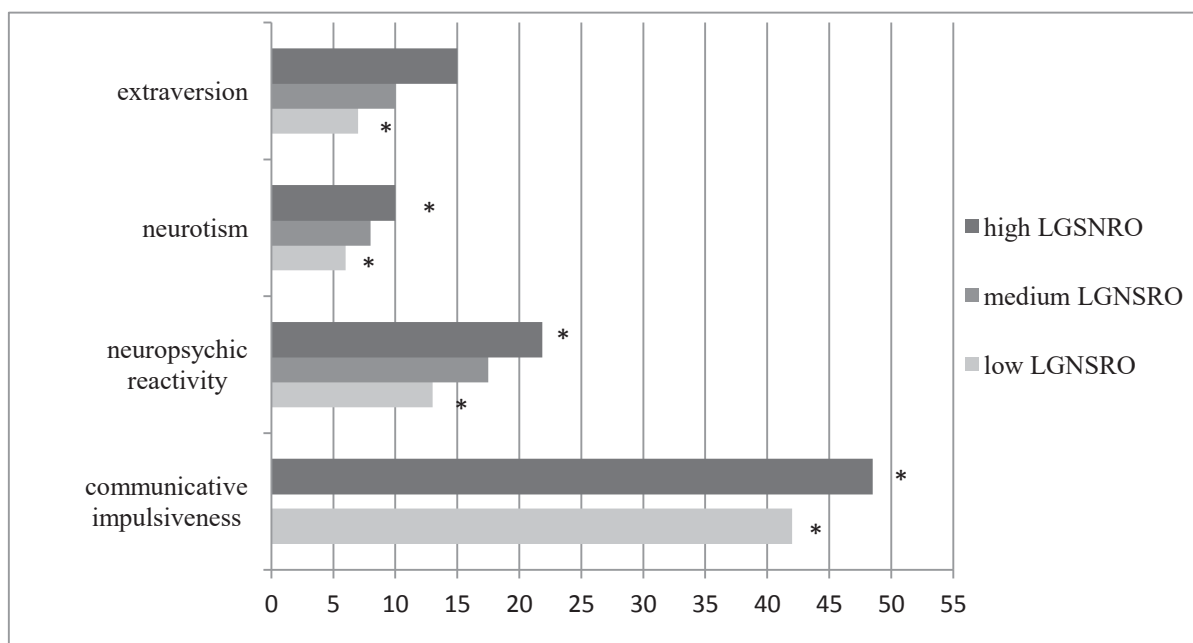


Fig. 2. Expressiveness of psychological parameters of inclination to impulsive behavior in individuals with high, medium and low LGNSRO

Note: * – statistically significant differences between observed groups at $p < 0.05$

The obtained result permits to conventionally correlate LGNSRO with the extent of expressiveness of social activity in behavior of an individual. Here, high LGNSRO was associated with inclination to impulsive behavior, low LGNSRO was associated with inclination to passive behavior, and medium LGNSRO was considered to be associated with inclination to initiative behavior.

Analysis of special literature was conducted to substantiate methods of quantitative and qualitative evaluation of predisposition of an individual to prosocial or asocial behavior. In result of theoretical study the main methodical approaches to evaluation of prosociality and asociality of human behavior were determined. Some of them were based on expert evaluation of actual behavioral manifestations of social maladjustment [10], others – on formalized self-esteem of behavioral strategies of an individual in hypothetically modelled life activity [11], others – on the analysis of human actions characterizing the type of his/her prosocial behavior [12]. The most systemic of existing approaches to evaluation of social behavior is the method of E.M. Kharlanova based on the self-esteem by an individual of his/her social competences and involvement in socially significant activity. In testing the respondent was offered to answer three questions: “To what extent do your priorities correspond to social norms?”, “Do you have an experience in realization of social initiatives?”, “How do you evaluate your achievements?” and to choose continuation for two proposals: “Realization of your aims will permit to improve ...”, “To observe social norms and laws ...” [13]. However, despite the complex character of evaluation of social activity, this method does not take into consideration quantitative expressiveness and prosociality-asociality balance of behavior.

In result of generalization of the existing methods, and resting on our experience in elaboration of criteria and parameters of typical forms of social behavior [14], a questionnaire was made up for quantitative evaluation of prosociality-asociality of behavior of an individual.

The questionnaire contained 5 questions to which the respondent should choose one of the offered answers:

1. In the ideal for you variant your occupation:

A. Suggests work in a team with elements of collective responsibility for the results of labor, close communication with colleagues and a probability for rendering them assistance and support.

B. Does not exclude work in a team, but with personal responsibility for the results of labor.

C. Suggests work in the individual mode with personal responsibility for the results of labor.

2. You feel negative emotions to people who differ from you in the way of life, who show marginality, belong to a different culture, religion, or to a special social category.

Yes _____ No _____

3. You express aggression to other people.

Yes _____ No _____

4. You feel a need to help other people:

Yes: only to close ones _____, to all people _____ No _____

5. Characterize yourself from the point of view of sociality of behavior:

A. – kind, soft-hearted, sweet

B. – principal, demanding

C. – explosive, imperative, aggressive, rude _____

In processing of the questionnaire the questions were correlated with the clue, where the number of points was determined for each question in asociality and prosociality positions simultaneously (Tab. 1).

In result of questionnaire survey prosociality/asociality index (PAI) was calculated by deduction of the total points of prosociality from the total points of asociality taking into account the sign. Prosociality/asociality index from +2 to +5 determines asocial behavior. The values of this index from -1.9 to +1.9 determine socially neutral behavior. The values of prosociality/asociality index from -2 to +5 indicate prosocial behavior.

Table 1

Prosociality-Asociality Points

<i>Asociality</i>						<i>Prosociality</i>					
<i>Occupation</i>	<i>Negative Emotions</i>	<i>Aggression</i>	<i>Rendering Help</i>	<i>Self-Esteem of Asociality</i>	Σ of <i>Asociality Points</i>	<i>Occupation</i>	<i>Negative Emotions</i>	<i>Aggression</i>	<i>Rendering Help</i>	<i>Self-Esteem of Prosociality</i>	Σ of <i>Prosociality Points</i>
<i>A=0, B=0,5, C=1</i>	<i>No =0, Yes =1</i>	<i>No =0, Yes=1</i>	<i>No =1, Yes =0 Only to closed ones =0,5</i>	<i>A = 0, B =0,5, C= 1</i>		<i>A=1, B=0,5, C=0</i>	<i>No =1, Yes =0</i>	<i>No =1, Yes =0</i>	<i>Yes =1, No =0, Only to closed ones=0,5</i>	<i>A = 1, B =0,5, C=0</i>	
1	2	3	4	5		1	2	3	4	5	
Question №											

To study interrelations between the developed parameters of prosociality/asociality and psychological parameters characterizing a social aspect of behavior of an individual an experimental study was conducted. It involved 98 individuals, men and women of 18-23 years of age (continuous sampling from four academic groups of Volgograd State University) in whom by questionnaire method prosociality/asociality parameters were simultaneously determined with calculation of PAI. On the basis of the results all participants were divided into three conventional groups

taking into account the PAI value – prosocial, neutral and asocial. After that, using Leonhard-Schmieschek questionnaire, in all respondents expressiveness of certain accentuation of personality was evaluated that reflected the extent of prosociality/asociality of behavior. The obtained results (Fig. 3) show that individuals with maximal PAI values (asociality of behavior) are characterized by minimal manifestations of emotional breadth, and those with minimal PAI values (prosociality of behavior) – by maximal manifestations of emotional breadth.

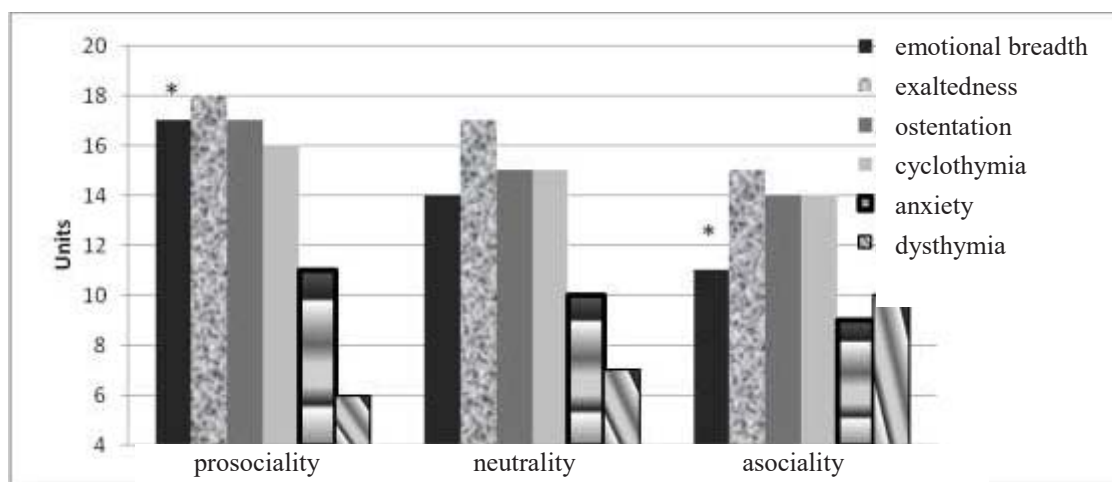


Fig. 3. Expressiveness of certain accentuations in individuals with prosocial, asocial, socially neutral and asocial behavior.

Note: * - statistically significant differences between groups of observation at $p < 0.05$

For technologization of the complex assessment of expressiveness and orientation of

social behavior a matrix of social activity of personality was proposed (Tab. 2).

Table 2

Matrix for Assessment of Prosociality-Asociality of Behavior

LGNSRO	PAI		
	+2 ÷ +5	-1,9 ÷ + 1,9	-2 ÷ -5
High	asocial, impulsive	socially neutral, impulsive	prosocial, impulsive
Medium	asocial, active	socially neutral, active	prosocial, active
Low	asocial, passive	socially neutral, passive	prosocial, passive

Correlation of individual LGNSRO and PAI values provides a complex characteristics of social behavior of an individual by 9 earlier theoretically established possible variants of combinations of the initial data (Fig. 1).

The developed method of assessment of social activity of an individual possesses a number of advantages as compared to traditional approaches:

4) complex consideration of physiological and psychological factors of social behavior;

5) possibility of qualitative typologization and quantitative assessment of the individual prosociality/asociality balance;

6) Algorithmization of testing process that minimizes a subjective influence on assessment of social behavior of an individual.

Conclusion

The conducted theoretical study permitted to establish new criteria of psychophysiological and socio-psychological typological expressiveness and orientation of social activity of an individual on the basis of two groups of the respective traits: impulsiveness – initiativity – passivity, and prosociality – social neutrality – asociality. The conducted experimental study permitted to correlate the levels of the general non-specific reactivity of an organism with the extent of expressive-

ness of social activity in behavior of an individual. Here, a high level of the general non-specific reactivity was manifested by inclination to impulsive behavior, low level – to passive behavior, and the medium level of non-specific reactivity of an individual was considered to have inclination to initiative behavior. A method of qualitative differentiation and quantitative assessment of the individual prosociality-asociality balance in human behavior has been developed and tested. In order to technologize the process of complex evaluation of the expression and orientation of social behavior, a matrix of social activity of an individual has been developed that integrally characterized the psychophysiological and psychological potential of an individual. The results of the research made it possible to specify the criteria and parameters of the phenotypic individualization of the social activity of an individual. The proposed method for assessment of the social activity of an individual permits to take into account a complex of physiological and psychological factors of the "sociality" of behavior and provides the possibility for qualitative typologization and quantitative determination of the individual balance of prosociality-asociality, as well as algorithmization of the testing process.

Authors have no conflict of interest to declare.

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