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Psychophysiological principles of features of the personality and possiblities of their correction

Psychofizjologiczne podstawy cech osobowości oraz możliwości ich korygowania

INTRODUCTION

Practical inquiries were the major methods in the development of individual psychology. Practical use of psychology in spheres of education, training, work as well as the organization and regulation of human mutual relations is impossible without careful studying and regarding psychological features of an individual. Formation and development of the person's features are significantly influenced by such factors as heredity, education, occupational activity, life conditions etc. Many scientists made attempts to evaluate psychophysiological conditions of some personal characters. Some factors determining formation of specific features still remain poorly studied, especially those which are derived from the subject's childhood experience and are fixed in certain neurophysiological system of a person's reaction to typical situations of interaction with certain people. Reactions of people, who surround the person regularly, support or block some or other actions of the child, that result in formation of individually specific dynamic stereotypes, which create psychophysiological principles of character of the adult person (including such features as: activity and emotionality, sociability or isolation, emotional stability or neurotism). Biological base of individual distinctions between people were investigated in a number of psychological characteristics by V.M.Rusalov [5]. Some scientists tried to find out connections with typological features of displaying nervous system properties, using techniques of studying a person's features developed with the help of a method of the factorial analysis (R. Kettell). As a result, certain appropriateness was found, but only with those under test whose nervous system properties were displaying extremely [7]. Though R. Kettel himself stated that a person's features have no real neurophysiological status and may be found as such only in correlation with exact measurement of observed behaviour. Having studied individual psychological differences, V.D. Nebylitsyn came to a conclusion, that it was possible to allocate two main orthogonal parameters in the structure of temperament, which he called activity and emotionality. Using the electroencephalography, he assumed that individual characteristics of activity as features of temperament are connected to structures of the frontal-reticular complex of brain, and parameters of emotionality are determined by the frontal-limbic system of the brain [6].

Hans Ajzenk tried to establish neurophysiological basis of a person's features. He has also allocated two orthogonal super features (or types): extroversion – introversion and neurotism – emotional stability. In the result of electroencephalographic examinations it was established, that introversion – extroversion are closely connected with a brain cortex activation, and neurotism – emotional stability is linked to the activity of the limbic systems of the brain [10]. As we see, both scientists came to similar conclusions at nearly the same time. H. Ajzenk has also developed the theory of psychopathology, the essence of which is, that various kinds of symptoms or frustrations may be referred to the combined

influence of a person's features and function of the nervous system. At the same time, the author stated, that mental frustration was not necessarily a result of genetic predisposition. In his opinion, a person is genetically predisposed to act and behave in a certain way in certain situations. In the author's opinion, there is a genetic base of mental frustration, but environmental factors may change such infringements definitely. The regulatory theory of temperament developed by Polish psychologist J. Strejlau stands close to the opinion of the above-mentioned scientists. He comprehends temperament as a set of the stable properties determined by congenital features of nervous and hormonal mechanisms. J. Strejlau also distinguishes two basic characteristics of a temperament: reactance and activity [11]. As we see, the majority of scientists came to the conclusion that there are neurophysiologic principles of features and types of the person. Some scientists are inclined to consider that there are certain predispositions to mental frustration. Therefore it was decided that connection of a person's features with some poorly studied psychophysiological parameters, which are considered by many scientists to be inherited, should be studied.

MATERIAL AND METHODS

The study of neurodynamic functions parameters included characteristics of the maximal speed of processing information on differentiation positive and negative stimuli, and total of the advanced signals. For presentation of load and determining results of processing of the information the technique and the computer program developed at the Institute of Physiology by A.A.Bogomolets of NAS of Ukraine [8] was used. The subject is shown signals on the screen of the monitor as a square, a circle and a triangle. As soon as a signal appears, the examinee should quickly and correctly press the right button with his right hand when a square appears, and press the left button with his left hand when a circle appears. A triangle is a brake signal and the subject should not press any button when it appears. The force of nervous processes (serviceability of a brain) parameter in the test is the number of erroneous reactions in percentage to total stimuli, occurring during performing the task. It is a common view, that the smaller the number of mistakes, the bigger is the force of the subject's nervous processes. For an estimation of personal features a reduced variant of Minnesota multidimensional personal questionnaire was used. According to various authors [1, 3], this test takes a leading place among other personal questionnaires. The initial aim of the questionnaire was to serve as an auxiliary means of psychiatric diagnostics, and the methods used for its devising made it unsuitable for estimating the personality of normal people. Despite of it MMPI has been widely used for work with normal and not just mentally ill people. The technique allows estimating the level of nervous - emotional stability, the degree of integration of personal properties, and the level of a person's adaptation to a social environment [4]. The test consists of 11 scales (8 basic and 3 additional), each of the basic scales is connected to the certain property of the person. Testing was carried out on the standardized form designed specially for these purposes. The profile of a personality was constructed according to the received data. Examinees were students of different faculties and rates. Statistic processing of the obtained data was done with the help of a computer program Statistica v. 5.0.

RESULTS AND DISCUSSION

According to the nervous processes force estimation technique subjects were divided into three groups: the 1st group included examinees with high, the 2nd - with average and the 3d - examinees with low level of nervous processes force. Basing upon parameters of average parameters of two groups with extreme displaying nervous system properties the profiles of personality were constructed (fig. 1).

Fig. 1 Structure of the person on average indices of two groups with extreme displays

	-		0		8 1		1 0		
Scale of lie L		0-	1°	-2	a 3	□4 5□			
Scale of reliability F		۰0	-2	□4	□6	□8	□10	□12	
Scale of correction K	0=	3	· · · · 6	∘8 9∘ 10∘	°12 °	□15			
-T - estimation 20	30	40	50	60	70	80	90	100	
1.A morbid depression	0	n n3	<u>-6</u>	- 4	· · ·12	□14	o 18	• •21	
(Hs)	□1		0	0		□15	В		
2. Depression (D)	0°	⁻²	□5 6	·8	°10	°13	m16	19	
	0	4.			12º	14	Þ	2	
3. A hysteria (Hy)	-2 -	□5	-8	°10 °	2	□16	8	× ×22	
	4.	□6		1	□14 《	1	20°		
4. A psychopathy (Pd)	0	7	-9	°11	°13	14	°17	e19	
6. A Paranoia (Pa)	0°	°1 2°	4"	□5	6	9.	#10	∘12	
7. A pedantry (Pt)	-7	□9	°12	□14	1 6 ∘17	□18	•21	3	
	□8	110	13°	°I3	10 17	19□	2	25	
8. Schizophrenia (Se)	60	□8	□ □12	□14	6 •	□20	2	°26	
	U	10°	> 0	1	18º	21°	24		
9 Mania (Ma)			5 "	o7 o	.9 .	110	∘13	×15	
	3□		> "	-, - (> -/	12°		***	
T-estimation 20 100		30	40	50	60	70	80	90	

Properties of nervous system Strong nervous processes

Weak nervous processes

Comparison of average values on some scores for people with extreme displays of nervous system properties has shown authentic distinctions (p < 0, 05) in such scores as hysteria, paranoia, psychostenia and schizophrenia.

Accordingly, correlation between sizes of the basic scores of a person's structure and the force of nervous processes was negative and expressed to the highest degree on the listed scales. It can be seen on Table 1.

Table 1

Scales	1	2	3	4	6	7	8	9	CNP
1. Morbid depressions	1								
2. Depressions	0,4094	1							
3. A hysteria	0,5935	0,5688	1						
4. Apsychopathy	0,6734	0,4542	0,548	1					
6. A paranoia	-0,2383	0,0202	0,2876	0,0486	1				
7. A pedantry	0,683	0,5889	0,5852	0,7948	0,2433	1			
8. Schizophrenia	0,626	0,2972	0,3266	0,8272	0,1609	0,8774	1		
9. Mania		-0,2977						1	
CNP	-0,1804	0,1081	-0,4385	-0,1399	-0,5725	-0,4039	-0,3211	0,0443	1

Research of the reasons of pathological formation of a person's character and possibilities of its correction results in necessity of a complex approach to render assistance in solving personal and interpersonal problems of an individual: psychological, medical, social, legal.

In B.S.Bratusja's opinion, differences between a person with pathologic character and a healthy person are as follows: people of psychopathic type draw together real and ideal aims and are unable to differentiate and part them; their mentality includes rigid, nonflexible target structures that without clearly expressed dynamic changes [2,c.199]. "...Mentally counterbalanced person protects his self-estimation by only differentiation between ideal, general and actual aims" [2, c. 200].

As a result of that a person is not able to adapt to changing circumstances properly and protects one's self-estimation, one's "Ego" from defeat by means of psychological protection (replacement - with demonstrative type, discredit of other people, projection of aggression on the surrounding people

- for paranoia etc.). "Psychopaths, being unable to differentiate aims of different levels see a direct trial of their "Ego" and that's why they depend so much on outer estimation and react so barely to experimental or vital success or failure. Often they are unable to take a stand of isolation not only in regard to their actual needs, but also in regard to themselves, to the whole situation " [2, c. 203].

Research by T.S. Jatsenko's showed that the system of psychological protection formed at a level of subconsciousness, allows "to hide away" the zone of the person's "weakness" from the person's consciousness and thus to block its changing and optimal development [9, c 52].

We see a possibility of correcting pathologic development of a person in using the deeppsychological approach to people who are willing to change their personality and take part in the work of the group of active social - psychological training (ACPT) [9]. By comprehending the essence and specific character of one's own psychological protection, its blocking effect in changing features of character, success in managing himself, activity and communication, a person carries out correction of his own inadequate behaviour.

Intensive, deep and long-lasting work on the basis of neutralizing psychological protection that prevents development, learning to be able to differentiate ideal "Ego" and real "Ego", taking the stand of isolation, can lead the person to form new dynamic systems on the psychophysiological level, which would have higher adaptability.

CONCLUSIONS

- ➡ Negative connection was found between indexes of main scales in people with extreme displaying nervous processes force parameters profiles, which is displayed most of all in the following scales: hysteria, paranoia, psychostenia and schizophrenia.
- No authentic correlations between properties of nervous processes and types of accentual character were revealed
- ⇒ The method of active social psychological training opens possibilities of correcting the person's character development.

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SUMMARY

Interdependence between features of the person and some psychophysiological parameters was investigated. Connection between properties of nervous system and some features of the person is established. Methods of correction of features of the person are submitted on the basis of deep psychological diagnostics.

STRESZCZENIE

Autorzy badali zależności między cechami osobowości a niektórymi parametrami psychofizjologicznymi. W pracy określono związki między właściwościami układu nerwowego a niektórymi cechami osobowości. Na podstawie głębokiej diagnostyki psychologicznej przedstawiono sposoby wpływu na poprawę cech osobowości.