The area of the psychological phenomena system modeling in Ukraine: development, results and prospects of research

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In this article was made a theory analysis of system modeling psychological phenomena in Ukraine. There was opened the content of systemic view at psychological phenomena on the current stage of psychological science. There were introduced results of empirical researches system modeling psychological phenomena in term 2010 – 2017 years. These results are summary of main methods like multivariate analysis methods such as multiple linear regression, analysis of variance, factor analysis, which have experienced the natural development and consolidation. Were defined prospects for further research in the framework of psychological phenomena system modeling is the development of methodological foundations of classical and post-neoclassical psychodiagnostics; ; the projective tests development under the international cooperation projects and modification of existing ones, the introduction of the computer technology in the scientific, practical and educational activities of psychologists.

*Keywords*: System analysis; system modeling; psychological phenomena; coping-behavior; psychodynamic approach; the projective tests; the proactive coping; professional development; personal security; professional and organizational identity; life orientation.

Introduction

Currently, when a holistic view of psychological phenomena has been actively developing in psychology, for theory and practice, it is not enough simply to reveal the properties, causes and consequences of certain cognitive and behavioral acts, and subsequently correlate them with each other. It is important to have a holistic understanding and reasoning of the individual’s behavior in an unstable political and socio-economic situation in the country and active reforming of all spheres of social life. The need for a systematic view of psychological phenomena at the present stage of the psychological science development requires a systematic approach, which becomes a generally recognized methodological platform, on the basis of which many diverse studies of various phenomena are carried out. By the adequate definition of S.D. Maximenko the principle of systemacity in psychology is aimed at the identifying the key patterns of the emergence and development of the psyche as a whole. Studying of the systematic approach and the general theory of systems of the Odessa School of Systemology, headed by Academician A.I. Uyomov are well-known far beyond the Odessa National University named after I.I. Mechnikov. A.I. Uyomov introduced ideas of the system parameters into the systemology. System definition of an object makes sense only if on the basis of such definition a characteristic of the object is possible, which determines its system specificity. This characteristic can be performed with the use of system descriptors and parameters. The system parameter values are interconnected by the system-wide laws that have both statistical and analytical nature.

The goal of the article is to consider the development and prospects of the study in the area of psychological phenomena system modeling in Ukraine.

Results & Discussions

The traditions of interdisciplinarity of the system approach have been further kept by the author in the studies of system modeling of the coping-behavior psychology. The study was held during 2005 - 2012, at that time the study of
the coping-behavior psychology in Ukraine was still in the formation stage. For the most part, in domestic psychology, the study of coping was performed at the level of empirical study of some of its features in certain contingents or the statement of how these features were related to certain individual psychological or socio-demographic characteristics. Therefore, at that time, it became significant to create a concept in which the formation of the coping-behavior was studied as a system of hierarchical interaction of different levels of the psyche. For the first time, we carried out a systematic and parametric analysis of the basic laws of overcoming behavior (coping-behavior) with the help of the formal apparatus of the Parametric General Systems Theory (PGST) – the ternary description languages. That enabled to perform systematic and parametric analysis of various structures and objects in those spheres of humanitarian knowledge, in which the system modeling and formalization of psychological phenomena was never succeeded with the use of conventional logical means. This was reflected in the doctoral thesis on the topic "Psychology of Coping-behavior: System Modeling" (Rodina, 2012). The key accomplishments of which were theoretical analysis of the main methodological approaches to the study of coping. The psychodynamic paradigm was used as an integrated approach that takes into account both conscious and unconscious psychological mechanisms. We have selected system analysis in view of the fact that it is an effective methodology that enables us to identify the commonest principles for overcoming the life crisis. In this study, for the first time in Ukraine, a system model of the coping-behavior formation was developed in which the external environment and the overcoming person were considered as an integral unified system consisting of six elements or subsystems, namely: stressor (life crisis), environment factors that had an impact on ontogenesis, actual environmental demands, the unconscious, consciousness and coping strategies. The empirical verification of the model was grounded on the joint use of qualitative and quantitative methodology. The total sampling of the study amounted to 1113 people. At the previous stage, we studied some of the psychometric properties of the psychodiagnostic techniques, which were then used in the thesis research, among which there were quite new to the Ukrainian researcher: the WOCQ test and the WOCQ. They also became the ground for the need to consider not only a conscious level of personality, but also an unconscious one as the determinants of coping-behavior. In this case, the contingents have been selected, whose representatives are in various stressful conditions. The typology of life crises based on Maslow’s hierarchy of needs was presented. Life crises were studied on the example of two polar situations: threats to life and threats to self-actualization.

There was developed a hierarchical three-tier model containing two situationally non-specific categories of higher order: the coping that requires efforts, and the coping avoiding them. The directional diagrams obtained through the modeling by structural equations have shown increasing of the unconscious tendencies rule in the formation of coping behavior in life-threatening situations. The classification models that differentiate the actors overcoming adaptively, from those overcoming not adaptively have been presented.

Psychodiagnostic methods for measuring coping in different situations have been proposed: new versions of the WOCQ, psychometric test and the author’s proactive personality scale PAS developed and verified. The valid and reliable Ukrainian versions of psychodiagnostic techniques were developed by B.V. Biron to study the coping constructs. Such as the Proactive Coping Inventory (PCI) (E. Gringlass, R. Schwarzner, S. Taubert). The proactive personality scale PAS developed by R. Schwarzner adapted by B.V. Biron was applied to study specific personal resources. Also, the following techniques were translated and adapted by him: the Authenticity Scale AS (A.M. Wood, P.A. Linley, J. Malby, M. Balouissis, S. Joseph), Self-Care Scale SCS (M. Rosenbaum), Students Stress Inventory SSI (B.M. Gadzella, D.V. Ginther and H. L. Fullwood). With the help of the system modeling method, it was identified that an actor’s own activity was the key essential feature of proactive coping, which essentially distinguished it from other types of coping. The basic system parameters of the proactive personality were formulated: autonomy, autoptosis, hierarchy. The motivational-need structure of the personality was correlated with the overcoming constructs and it was established that proactive coping met the needs that lead to the development of abilities and self-actualization of the individual. It has been found that the resource factors of proactive overcoming are proactive attitude, overall self-efficacy, authentic life and learned potential. The fundamentals of differentiation of the coping constructs between personal coping resources and coping strategies have been reviewed and new, more adequate criteria (temporal characteristics of the stressor...
determined overcoming constructs. 412 persons, who reside in cities of four geographic regions of Ukraine, located at different distances to the combat zone: Kyiv, Odessa, Mariupol and Lviv, were surveyed. The age of the persons ranged from 17 to 72 years. There were 208 men and 204 women among the respondents. Furthermore, the achievements of this work were the development of standardized Ukrainian versions of the social coping-resource scale (S.T. Yabik, D.V. Faroun), the basic beliefs scale (R. Yanoff-Bullman) and the subjective safety perceptions inventory (N. O. Lyz, Zh. G. Kupovych, A. K. Prima, T.O. Basanova). A socio-economic status analysis was performed in the regional context. It has been shown that in the immediate vicinity of the combat zone, the conditions of social space are most unfavorable. It was found that the most active citizens of Ukraine used such coping-strategies as problem solving, problem analysis, self-control, and proactive coping. The personal determinants of these strategies have been identified, namely: objectivity, rationality and introjection. It has been determined that the valuable material objects availability in the property is a universal prerequisite for instrumental and psychological support. The role of being married as a factor of instrumental but not psychological support has been revealed. The exceptional significance of instrumental support for the problem-oriented coping, as well as for the future-oriented coping, has been found. It has been noted that among social coping-resources, the main protective factor for subjective safety sense is instrumental support. It has been shown that in the conditions of immediate vicinity to military threats, the basic beliefs of an individual have tended to be negative. It has proved that a subjective safety sense helps a person to overcome a negative attitude towards himself/herself and the world.

Further development of the ideas of the psychological phenomena system modeling has been presented in the survey performed by A.P. Karpenko on "Determinants of the professional identity of the engineering and technical workers", in which the conceptual system model "professional identity - authenticity - professional success" and its determinants have been developed (Karpenko, 2016). It has been noted that the formed professional identity leads to the greatest professional success when an actor is an authentic person. It has been proposed to carry out empirical verification of the model with the help of mathematical modeling method with structural equations on two samples: the master sample and comparison sample. The model has been tested on an experimental sample of engineering staff as well as on the control sample of humanitarians, diagnostic material package has been arranged and adapted to determine the level of the professional identity formation of an engineering employee. The empirical verification of the proposed model has been completed with the help of the system modeling method.

At the next stage in the area of the psychological phenomena system modeling there is a study performed by N.S. Semenyuk on "Psychological peculiarities of life orientations in the health workers of the ophthalmologic profile" (Semeniuk, 2016). The model of determination and implementation of the professional life orientations has been already developed on the example of health workers of the ophthalmologic profile. It has been shown that the social occurrence and degree of its definability) have been proposed. The concept of the "coping-vector" has been introduced, which is a universal descriptor of overcoming. It has been determined that proactive coping-vector is characterized by persistent beliefs of the individual in its own potency to self-development and the ability to change the environment. It has been found that proactive coping is a construct that is of the utmost significance in maintaining the physical and psychological health of the individual, promoting a healthy lifestyle and a way of thinking.

Further development of the ideas of the psychological phenomena system modeling was reflected in the study of M.V. Kapustyansky on "Psychological conditions for the motivation development of the professional growth of the leadership personality" (Kapustyansky, 2016). The study was commenced in 2013, and in 2016 the model was first introduced and the structure of the motivational leader's potential was determined, in which the motivational components were in system relations with the personal potential and were characterized by hierarchical subordination. With the help of the created model, the psychological conditions for the motivation development of the professional growth of the leadership personality were studied by him. The algorithm of the empirical research was developed, which consisted of four stages: three stages of the summative assessment (sample - 407 managers) and one stage of the formative assessment (control group - 3 managers, experimental group - 30 managers). A model of motivational potential has been constructed, the components of which act as system integrators of the personal leadership potential. The "core" of the motivational personality potential has been identified, which works to the utmost in conditions of satisfaction with labor. It has been proved that peripheral blocks are able to direct other motivational vectors, in particular: motives for avoiding, complexity of the task, manifestation of initiative, volitional efforts, etc. It has been found that higher positions are held by managers (leaders) who seek not a direct award and satisfaction from their professional activity, but those who show more mature motivational qualities: focus on maximizing positive experiences and minimizing negative attitudes towards yourself, on forming their own successful professional identity, those capable of responsibility, creativity and personal growth. Forecasting models of professional competencies have been constructed. The author's corrective-molding training program for the development of motivation for career and professional leader growth, which confirmed its effectiveness, has been proposed. The program was focused on such elements of motivational potential as competitive motive, volitional effort, assessment of the achievements level, own potential assessment, targeted level of the efforts mobilization, expected result level, initiative.

The next completed research in the line of psychological phenomena system modeling, which was held during 2014-2017 was a scientific subject of O.V. Maltsev "Coping as an Individual Safety Factor in the Contemporary Social Space" (Maltsev, 2017). The author developed and verified the coping implementation model as an individual safety factor in the modern social space, in which subjective safety is in a system relationship with the socio-economic status, individual psychological peculiarities and socially-
importance and complexity of the professional duties of health workers in a collision with current socio-economic problems is appealing to professional orientations that are part of a wider range of the life orientations of an individual. It has been stated that in the national psychology the problem of life orientations of health workers was studied mainly on the students of Medical universities, and in foreign studies, the life orientations of health workers were studied in connection with their attitude to euthanasia, the conflict of personal values with health system values, value orientations, stress, burnout, quality of life, balance between work and family, and so on. It has been determined that with the help of system modeling, the life orientations of health workers remain hardly studied. Further prospects of scientific studies, involving the development of the empirical study concept of the psychological characteristics of life orientations of health workers in case of ophthalmological profile have been formulated. The proposed model of determination and implementation of life orientations of health workers of the ophthalmological profile has been presented in the form of the causal system. It has been shown that it consists of subsystems: “Life orientations”, “Socio-demographic factors”, “Organizational environment factors”, “Positive personality traits”, “Stress response and burnout”, “Job and organization satisfaction”, “Balance between work and personal life”.

Prospects for further scientific studies have been provided in the approved theme of the thesis by Lapteva N.L. “System parameters of the professional organizational identity” and in the departmental topic “Human orthopsychosis psychology studying” (state registration number - 0116U006605) of the Odessa National University named after I.I. Mechnikov, devoted to the problems of harmonious development of the person and its readaptation to the life conditions, rehabilitation and habilitation after negative life events, which is quite relevant for Ukrainian society. In our view, a radical overview of existing approaches to a system understanding of psychological health, as well as regarding some of its fundamental aspects, and with regard to their applied implementing, is necessary. And in this regard we consider it expedient to rely on the scientific heritage of a prominent Ukrainian scientist, whose name was given to our Odessa National University, - Nobel Prize Laureate I.I. Mechnikov.

Summarizing the development of the area of the psychological phenomena system modeling in Ukraine and its results and prospects, the following can be concluded - from our point of view, the need to apply these methods in research appears to be relevant: first - the application in theoretical methods – the system modeling, in addition to the analysis of philosophical, psychological, sociological sources, which are used to determine the development status of the problem under study and such methods as comparison, analysis, synthesis, generalization, systematization, classification, etc. Because system modeling based on structural equations, which is a comprehensive and extremely powerful technique of multivariate analysis, involves a large number of methods from different fields of statistics. It can be briefly noted that structural modeling is the development of many multivariate analysis methods such as multiple linear regression, analysis of variance, factor analysis, which have experienced the natural development and consolidation here, is carried out with the use of qualitative and quantitative system analysis methodology. Modeling by structural equations is a method of holistic phenomena representation. This is definitely systematic method in the overall philosophical (systematological) understanding. This is a form of quantitative system analysis Hard Systems Methodology (synonymous with "hard modeling", where the system is described with numerical expressions, as opposed to "soft" one Soft Systems Methodology, where description is provided with the use of symbols and/or words). The empirical verification of the coping-behavior formation model, constructed on the basis of "hard" methodology was implemented using specially selected psychodiagnostic methods to study each of the subsystems: for unconscious level - Vartegg Drawing Test, method of portrait elections by L. Szondi, the Luscher color test, for conscious level - the MMPI inventory, for coping-behavior - WOCQ, Parametric General Systems Theory (PGST), which for a long time had been developing by the Odessa School of Systemology, headed by Academician A.I. Uyomov, provided extensive opportunities for soft modeling of the studied phenomena. First of all these opportunities are associated with the application of the formal apparatus - ternary description language, through which it is possible to carry out systematic and parametric analysis of various structures and objects in the areas of human cognition, in which the usual logical means have failed to perform formalization. Thus, the use of the ternary description language for the modeling of phenomena studied has provided with a special novelty to epistemological discourse in this area of research and has defined the conceptual foundations for studying the phenomenon under study.

Secondly, with regard to empirical research methods, an immediate solution to the issue on the creation of adequate to current practical psychology demands for Ukrainian-language psychodiagnostic tools. Because today in domestic psychology there is a widespread practice when Russian-speaking methods are used to study individuals speaking Ukrainian, or their translations performed without proper psychometric substantiation.

Third, with regard to the mathematical statistics methods, the implementation of mathematical analysis of empirical data is required using the current statistical software packages IBM SPSS Statistics 23.0.0, IBM SPSS Amos 23.0.0, and R 3.3.2.

Prospects for further research in the framework of psychological phenomena system modeling is the development of methodological foundations of classical and post-neoclassical psychodiagnostics; the projective tests development under the international cooperation projects and modification of existing ones in cooperation with the L. Szondi research institute in Zurich and other research institutes; the introduction of the Consul Integrator computer technology developed by the candidate of medical sciences, psychologist of Uktelkinvestgaz company, the head of Consul Grup M.I. Vigdorchyк, in the scientific, practical and educational activities of psychologists.
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