

THE METHODOLOGY OF SYNDROME ANALYSIS WITHIN THE PARADIGM OF “QUALITATIVE RESEARCH” IN CLINICAL PSYCHOLOGY

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This article considers the potential for applying contemporary philosophical theories (which distinguish classical, nonclassical, and postnonclassical types of scientific rationality) to the specification of theoretical methodological principles in the study of clinical psychology. We prove that psychological syndrome analysis (developed by the Vygotsky–Luria–Zeigarnik school), taken as a system of principles for organizing research as well as for interpreting its results, conforms to the epistemological complexity of the object of study in clinical psychology, which is understood in the postnonclassical scientific view as a self-developing system.

We present an example of the formation of a psychosomatic syndrome in 290 patients with mitral-valve prolapse, applying methods of qualitative and statistical data analysis in a longitudinal clinical-psychological study. We prove that the syndrome is system-defined and has a multilevel character, and that its structure is determined by several factors: the motivational factor (with the domination of the failure-avoidance motive and the unsatisfied self-approval need); the factor of the emotional-regulation disorders, represented by both excessive emotional repression and lack of emotional control; and a psychophysiological factor. We argue that a psychosomatic syndrome can be used as a means for approaching not only diagnostic but also prognostic tasks both in clinical psychology and in medicine.

We conclude that the results of our empirical study, conducted within the framework of postnonclassical philosophy and using the methods of psychological syndrome analysis, not only expand the scientific background on the nature of a particular disease (mitral-valve prolapse) but also pose further questions whose investigation will broaden our view of the psychological mechanisms of psychosomatic-syndrome genesis.

Keywords: postnonclassical scientific rationality, self-developing system, psychological syndrome analysis, psychosomatic syndrome, psychological factors of psychosomatic-syndrome genesis, mitral valve prolapse, emotional tension, emotional regulation, failure-avoidance motive.

The current methodology of scientific knowledge adopted by the humanitarian sciences, including psychology, has been marked by an ever-increasing interest in so-called qualitative research. (Observations to this end may be found in many works: Corbin & Strauss, 2007; Glesne & Peshkin, 1992; Smith, 2003; Tesch, 1990; Watt, 2007; Zinchenko, 2011; and others.) This tendency may testify to the urgency and timeliness of the search for a methodological basis and the establishment of methodological principles in psychology. Russian psychology, it should be pointed out, has given special attention to the methodological objectification of scientific studies from the very first steps along the path of its establishment as an independent sphere of scientific knowledge. Beginning with the works of G.I. Chelpanov and L.S. Vygotsky, the methodology of psychological science in Russia has been conceived as a generic system of principles for conducting research, and these principles have been employed on every level of study (Bassin, 1971; Kornilova & Smirnov, 2011; Zhdan, 2010; Zinchenko & Mamardashvili, 1977; Zinchenko & Smirnov, 1983). Nowadays the works of such eminent Russian scholars as V.S. Styopin, V.A. Guseynov, V.A. Lektorsky, and T.I. Oyzerman contribute much to the development of philosophical methodology in the humanitarian sciences, particularly psychology.

Contemporary Western philosophical thinking provides a productive foundation for the development of the humanitarian sciences, including psychology. The works of T. Kuhn, P.K. Feyerabend, C. Taylor, D. Dennett, K.R. Popper, R. Rorty, W. Quine, and others focus on the logic and objective laws of the development of science and on the conditions facilitating the emergence of new theories, paradigm shifts, and ways of thinking scientifically, all based on criticism of the former methodological standards for science.

In recent times psychology, led by philosophical science, has actively assumed responsibility for the classification of scientific approaches, which provides the foundation for the following types (and stages) of the development of scientific knowledge: classical, nonclassical, and postnonclassical. The contemporary state of scientific knowledge is generally believed to be characterized by the concept of postnonclassical science (V.S. Styopin, V.A. Lektorsky, S.P. Kurdyumov, A.V. Yurevich, Y.P. Zinchenko, V.G. Budanov, V.I. Arshinov, E.A. Mamchur, V.S. Yegorov, I. Prigogine, J.-F. Lyotard, and others).

Prigogine was the first to point out in his works the definite epistemological restrictions present in both the classical academic worldview, characterized by total, all-embracing determinism and causality and admitting only one model of reality, and the quantum-relativistic, nonclassical approach in natural science (Prigogine, 1989; Prigogine & Stengers, 1984). Prigogine's ideas about a new quality of science, revealing its intrinsic pluralism, made a lasting impact on postmodern philosophy, which was developing at the time, as well as on the development of science at large. As Lyotard (1979) remarked, the very status of science is being dramatically changed in the context of postmodern culture and postindustrial society. Mankovskaya (2000, p. 200) observed that "Prigogine's criticism of the classical academic worldview as a realm of total determinism and causality, concerned with a single model of reality and its molding in time, as well as his censuring of the quantum-relativistic character of the nonclassical natural science of the first half of the 20th century, facilitated development of our conception of post-nonclassical scientific and artistic endeavors as probability systems with a low probability factor, a concept that is in tune with the contemporary worldview, which is presented as a set of nonlinear processes."

Scholars agree that postnonclassical science is generally characterized by the shift from phenomenological description to structural description – that is, the shift from regarding the objects of study as self-regulated systems to recognizing them as complex, self-developing systems. According to its most general definition, a self-developing system may be regarded as a system that autonomously selects the aims of its further development and the criteria for their fulfillment – in other words, a system that modifies its structure, dimensional characteristics, and other data in the process of development. The most exhaustive description of the characteristic features of self-developing systems is provided in the works of V.S. Styopin¹.

¹ Styopin notes that self-developing systems reveal a hierarchy in the levels of their elements and have the ability to segment new levels in the process of development. Every new level extends the adverse effect on the already-established levels, reconstructing them in such a way that the whole system acquires a new integrity. The emergence of new levels of organization differentiates the whole system, forming new, relatively independent subsystems. At the same time, the control block is being restructured and new parameters of the sequence and new types of direct and adverse ties are being introduced. The cat-

A remarkable peculiarity of postnonclassical science, which regards its objects of study as self-developing systems, is that it offers ample scope for cross-disciplinary studies, emphasizing its pluralism, controversies, ambiguity, anomalies (Prigogine & Stengers, 1984).

The successful development of science and technology nowadays is brought about in connection with complex, self-developing systems. They are generally acknowledged to include biological objects, the objects of modern nanotechnology and biotechnologies, complex computer networks, the Internet, as well as all social objects, regarded in the context of their historical development – *inter alia*, humans and their psyches.

Psychological Syndrome Analysis

We argue that the concept that lies closest to this approach in psychology is the cultural-historical concept developed by Vygotsky (1936), which is underpinned by his ideas about the systemic and semantic

egories of “part” and “whole,” as applied to complex, self-developing systems, acquire new features. The whole no longer comprises the qualities of its parts; rather a system-based quality of the whole appears. A part within the whole exhibits other features than those outside it. This type of system is characterized by development, in the course of which one type of self-regulation is replaced by another. Complex, self-developing systems are characterized by openness and the ability to exchange matter, as well as to exchange energy and information with the surrounding environment. Such a system retains its openness and ability for exchange with the surrounding environment at every stage of its development. At particular stages – such as a phase transition – the former structure is destroyed, internal relations are broken, and the system enters a period of dynamic chaos. These stages of phase transition reveal a range of plausible directions for system development. Some of them could mean simplification of the system or its wreck and ruin as a complex, self-organizing unit. But there are other possibilities as well, such as the emergence of new levels in the system’s structure, which may lead the system to a brand-new stage in its self-development. The emergence of a new structural level as a consequence of a previous related causality has an adverse effect on the new level, in which the consequence is now operating as a cause of the change in former relations (circular causality). In the course of system development the measure of the probability of an event is being changed: something that was perceived as hardly probable in the initial stage of development may become more probable as the new structural levels are being formed (Styopin, 2003, 2006, 2007, 2011).

structure of consciousness and the irreducibility of higher mental functions to a set of elementary functions. The formulation of the task of localizing the higher mental functions provides yet another good example of the fact that a unity cannot be reduced to a simple sum of its separate items (Luria, 1962, 1973).

Vygotsky formulated theses on the systemic and semantic structure of consciousness; he regarded higher mental functions as socially originated, structurally mediated, and random by means of their functioning. In the 1930s these views inspired an active search for a study technique in psychology. Psychological syndrome analysis was introduced by Vygotsky (1936) as the one epistemologically correct method for studying mental functions. The methodology was further developed and acquired its theoretical and empirical foundation in the works of Luria.

Even today, it should be admitted, the methodological principles of syndrome analysis are still regarded as the most heuristic and adequate for the contemporary level of scientific knowledge, with its postnonclassical worldview, which regards the objects of its study not just as self-regulated but as complex, self-developing systems.

Methods of psychological testing and of classical psychological research employed regardless of the general context of philosophical and scientific methodology, as well as methods for population statistical studies favored by the social sciences, evidently do not always conform to the methodological complexity of the objects of study – humans and their psyches – which, in fact, constitute complex, self-developing systems.

This whole discussion thus unequivocally raises the question of method selection within cognitive activity in psychological studies, which embraces the “dialectics of the relationship” of quantitative and qualitative methods.

The methodology of qualitative analysis belongs to a tradition running from Edmund Husserl’s phenomenology, which was further developed in the works of Jean-Paul Sartre, M. Merleau-Ponty, and others. The sphere of qualitative research in contemporary humanitarian sciences exhibits great variety in its trends, strategies, and techniques. Although detailed scrutiny of the typology of qualitative methods in the system of scientific knowledge lies beyond the limits of this study, it should be stated that today a comprehensive list of qualitative methods amounts to dozens of items. The qualitative method in contemporary psychological science embraces the following: case studies; biographi-

cal studies, including analyses of life stories; phenomenological analysis and the hermeneutical method; the method of “grounded theory”; focus groups; assessment programs; structural analysis of events; qualitative content analysis; discourse analysis; narrative analysis; dialogical and cultural studies; heuristic studies; clinical studies; the method of “deliberate generalization”; and others, including psychological syndrome analysis (Corbin & Strauss, 2007; Creswell, 1998, Denzin & Lincoln, 2000; Giorgi, 1986, 2003; Luria, 1962, 1973; Smith, 2003; Sokolova, 1980; Tesch, 1990; Vygotsky, 1936; Watt, 2007; Zeigarnik, 1986; Zinchenko, 2011). Unfortunately, however, a generally accepted classification of these methods does not yet exist.

A qualitative study is one that considers mainly qualitative data and employs qualitative methods of analysis. In most cases it is a special form of analysis of the material, predominantly texts, when the emphasis is shifted from statistical calculation and the generalization of certain units of the text to their meaningful selection, scrutiny, generalization, comparison, and interpretation (Dey, 1996, Smith, 2003; and others).

It is worth noting that in a number of cases (considering the specificity of the aims and purposes of a study – in particular, when it qualifies as cross-disciplinary research – its scale, or the type of data a scholar has to work with) it is hardly possible and absolutely improper to strictly counterpose qualitative and quantitative methods of study, however large the gap between the two might appear from an epistemological point of view. But we should be aware that, because of epistemological differences, there will likely be difficulty in interpreting the obtained results and a certain inconsistency in them when one deals with data of different types within the framework of one study.

Nevertheless, despite these difficulties, the combination of qualitative and quantitative methods within one study may be methodologically acceptable and justified and sometimes rather efficient: even conflicting results obviously contribute to our understanding of human behavior. When we examine a phenomenon from different angles, employing the two counterposed approaches, we may succeed in obtaining a more detailed picture than we could by using only one approach (Camic, Rhodes, & Yardley, 2003; Issel, 2008; and others).

It is unfair to presume that scholars who employ the qualitative method never use statistical methods of study, although they may not use them extensively and may prefer ordinal scales for assessment (Kvale,

2003; Tesch, 1990). Any quantitative study, in its turn, contains a “qualitative” part: the description and interpretation of the achieved results and the loading of these results with “qualitative psychological content” (Kornilova & Smirnov, 2011).

The multicentered studies conducted in clinical medicine, which have gained in popularity in recent years, may serve as a good example of a field in which it is generally impossible to strictly counterpose qualitative and quantitative methods of study, despite the pronounced epistemological differences between them. Psychologists are invited to participate in such projects in order to consider of a number of theoretical and applied tasks. The growing interest of theoretical and applied medicine in the data of psychological diagnostics is by no means accidental.

When experts come to assess the present state of scientific knowledge in contemporary medicine, they note the focus of its analytical interest on a comprehensive analysis of personality in disease; this focus is necessitated by rehabilitation tasks, as well as preventive treatment and encouragement of treatment compliance. These tendencies manifest themselves, in particular, in the fact that the category of “person-centered integrative diagnosis” was adopted as part of the scientific approach. Within this category the structure of medical diagnosis includes not only certain facts concerning impaired health but information about maintaining health and takes into consideration personal and social values and the resources of the patient and his/her ability to adapt and compensate (Mezzich, 2005; Sadler, 2005; Salloum & Mezzich, 2009).

The paradigm of person-centered integrative diagnosis and the model of “functional diagnosis,” which is well known among Russian specialists (Geyer, 1933; Kotsyubinsky & Zaitzev, 2004; Melehov, 1963, 1977), are obvious ways of realizing the general scientific approach in medicine. It is equally obvious that this method for establishing a diagnosis can hardly dispense with the data of psychological diagnostics, which, in turn, should also exhibit the qualities of a complex system. Here we should take into account the fact that psychology and clinical medicine deal with empirical data of various types, and all attempts at their direct correlation may not be methodologically correct.

Thus, the methodology of “qualitative study” (which includes “qualitative planning” and “qualitative analysis” of the data and covers as well

the data of statistical analyses) appears as a way of arranging cross-disciplinary clinical-psychological studies (Issel, 2008; Sadler, 2005).

The fact that light is now being directed at psychological research paradigms in the clinical-psychological context is a result of the fact that contemporary clinical psychology can suggest the mode of organization for a study and a method for conducting it; this method, which enables the observation of complex clinical-psychological phenomena from the perspective of a systemic approach, is psychological syndrome analysis (Luria, 1962, 1973; Vygotsky, 1936).

The principle of syndrome analysis of psychic phenomena, which is one of the most essential principles in the methodology of Russian clinical psychology (the Vygotsky–Luria–Zeigarnik school) and whose heuristic approach has been proven in such branches of clinical psychology as neuropsychology and abnormal psychology, has recently gained increasing application in psychosomatic medicine and corporality psychology. There the necessity of forming a particular type of syndrome – a psychosomatic syndrome – is discussed. Its formation is believed to facilitate the structural analysis of complex psychosomatic phenomena, the separation of the manifestation of psychological factors and mechanisms from their emergence and functioning, and the psychological interpretation of clinical phenomenology (Nikolaeva & Arina, 1998, 2003; Tkhostov, 2002), and thus it provides data for establishing an “extended diagnosis.” It is well known that the procedure of psychological syndrome analysis enables a prognosis of the progress of a disease in a patient (Luria, 1962, 1973; Vygotsky, 1936).

Research Project

In this article we explore the logic of the formation of a psychosomatic syndrome in patients suffering from mitral-valve prolapse (MVP) in order to illustrate the qualitative approach in clinical psychology². We seek to demonstrate that a psychosomatic syndrome may serve as a means for determining not only diagnoses but also prognoses both in clinical psychology and in medicine.

The present research relates a psychosomatic syndrome to an invariable set of psychological, psychovegetative, and genuine somatic symp-

² The term *mitral-valve prolapse* refers to the prolapse of the whole heart valve or of the part of it in a systole below the level of the valve ring (Barlow & Pocock, 1988).

toms and syndromes. The structure and dynamics of a psychosomatic syndrome may be hypothetically shaped by a number of causes (factors) of both a psychological and a physiological nature, including morpho-functional factors, which distinguish psychosomatic syndromes from neuropsychological ones. The suggested definition of the concept of *psychosomatic syndrome* appears to be epistemologically correct from the perspective of postnonclassical methodology.

In 1993–2010 we initiated an extensive cross-disciplinary study, which was conducted on participatory terms with specialists in the pre-eminent department of hospital therapy at the Moscow State University Faculty of Medicine and Dentistry (A.I. Martynov, O.B. Stepura, O.D. Ostroumova, and E.V. Akatova), under the supervision of V.V. Nikolayeva. This clinical-psychological study explored the relationship between the psychological characteristics of MVP patients and the particularities of the clinical performance they display; we believe that this relationship provides the basis for an assessment of the role psychological factors play in structuring the clinical symptomatology of these patients.

Our research interest in MVP patients is far from being accidental. MVP is widespread, affecting between 30.8% and 42.0% of the population (Barlett, Kirtley, & Mangham, 1991; Devereux, Kramer-Fox, & Kligfield, 1989; Storozhakov, Vereshhagina, & Malysheva, 2004). Besides, there is a risk of developing serious complications, the most dangerous of which is sudden death, which occurs mostly under conditions of emotional and physical stress (Corrado, Basso, Rizzoli, Schiavon, Thiene, 2003; Cowan & Fye, 1989; Puchala, 1990). These considerations justify the high social importance attached to MVP. Other relevant facts include the following: a pronounced dissociation between numerous subjective complaints of the patients, on the one hand, and the scanty data from objective studies, on the other (Joiner & Cornman, 1986; Montvila & Sargautite, 1983); indications of widespread anxiety disorders accompanying MVP and the unpleasant inclusion of the formation of “functional MVP” within panic disorder (some authors assert that panic attacks not only may be “triggered” by MVP but may lead to its development: Coplan, Papp, King, & Gorman, 1992; Gorman et al., 1988); cases of a genuine reduction in the intensity of clinical symptoms after psychotherapy and antidepressant or anxiolytic treatment (Gonzalez et al., 2002; Pariser, Reynolds, Falko, Jones, & Mencer, 1981; Scordo, 2007; Stavrakaki, Williams, Boisjoli, Vlad, & Chassé, 1991); there is even some evidence that such treatment may

be symptomatolytic—that is, it may result in the complete disappearance of echocardiographic MVP indicators in patients suffering from panic disorders (Coplan et al., 1992).

The data, as a whole, reveal inconsistency and ambiguity and indicate the problematic character of the treatment of such patients from both a clinical and a psychological point of view; these findings have inspired great academic interest from medical and clinical-psychological researchers in patients suffering from this form of heart pathology, and the findings also suggest the absolute relevance of formulating psychosomatic hypotheses.

Within the period 1993–2010 we observed 290 MVP patients aged from 18 to 37 at the beginning of the project (the average age was 25.6 ± 1.1) and 73 healthy (no abnormality detected) persons (the average age was 27.5 ± 1.3).

The group of MVP patients consisted of three subgroups:

- those voicing no health complaints at the time they were introduced into the group (60 persons, 21% of cases);
- those who did not resort to medical treatment but, after the proposal of research participation, uttered complaints of a psychovegetative character (144 persons, 49% of cases);
- those who sought medical advice at the Moscow city vegetological center and were admitted to somatic hospitals in Moscow with heart pains and other psychovegetative complaints (86 persons, 30% of cases).

In the follow-up study (conducted 15 years later) 92 MVP patients took part. Among them 32 persons were undergoing on-request psychotherapy during the period, 60 persons received scheduled medication treatment (magnesium orotate, alprazolam).

The planning and organizing of the research and data analysis were based on the systematic principles of general science and on the principles of the postnonclassical paradigm regarding dynamic, self-developing systems as an object of study (L. von Bertalanffy, N.A. Bernshtein, I.V. Blauberg, B.M. Kedrov, A.I. Uyomov, A.I. Rakitov, E.G. Yudin, I. Prigogine, V.S. Styopin), as well as on the basic principles of the cultural-historical concepts of Vygotsky and their application to clinical psychology (Luria, 1962, 1973; Nikolaeva & Arina, 1998, 2003; Tkhostov, 2002; Vygotsky, 1936; Zeigarnik, 1986; Zinchenko, 2003, 2011).

Given the cross-disciplinary character of the study and its principal aims, as well as the wide range of sampling, the study employed both the methods of psychological and medical diagnostics³ and the methods of statistical data processing⁴.

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

The *first, tentative stage* consisted of developing the range of psychological phenomena specific for the group of patients and defining the subject area as well as the hypotheses of the general study.

Structured clinical-psychological interviews and psychological testing were the basic methods chosen for this stage. We were completely aware of the fact that the use of qualitative and quantitative data within a single study can create difficulties in processing the achieved results and in interpreting them. However, it is well known that only the combined application of the two methodological approaches can produce the most exhaustive picture of any phenomenon, which is exceedingly important at the initial stage of planning.

³ The medical part of the study involved a complex of diagnostic procedures aimed at establishing a diagnosis for each patient (all patients had an ultrasonic cardiogram) and establishing the degree of intensity of clinical symptoms and signs. Arterial tension was monitored for 24 hours, and 24-hour electrocardiogram tracing was also undertaken. Occurrence of the symptoms of vegetative dystonia syndrome was revealed with the Standard Questionnaire for Exposure of Symptoms of Vegetative Changes (Vein, 2003). A sound-immunologic method was employed for the detection of the total cortisol in serum. An assessment of psychopathological status was conducted with data from a psychiatric examination, in accordance with ICD-10 procedure-coding criteria.

⁴ Statistical processing of the data was conducted using various methods: calculating mean values and the average error mean; calculating the certainty of distinctions between samples on indicators of probability in distinctions between indicators (Student *t*-criteria); exposing the correlations among investigated features in groups of participants; employing the method of calculation of Spierman indices of cograduation (*r*) and the method of factor analysis of variables (the principal-factors method based on the interpretability of the discovered factor structure with consequent oblique rotation of the factor basis and rotating factors' rating, according to Kaiser's rule) (Gusev, Izmajlov, & Mihalevskaja, 2005).

We used the Minnesota Multiphasic Personality Inventory (MMPI) (Berezin, Miroshnikov, & Sokolova, 1994; Hathaway & McKinley, 1940); the Sixteen Personality Factor Questionnaire (16 PF) (Cattell, 1957; Cattell & Mead, 2008; Melnikov & Yampolsky, 1985); the Eysenck Personality Questionnaire (EPQ) (Eysenck & Eysenck, 1975; Kabanov, Lichko, Smirnov, 1983); and the Schmieschek questionnaires (Schmieschek, 1970).

It was demonstrated on the basis of a quantitative analysis of the whole data set collected for this stage that most of the MVP patients exhibited a complex of emotional personality features, including increased anxiety, emotional lability, self-distrust, propensity toward self-accusation, increased sensitivity to one's failure, and propensity to lose control over emotions; all these characteristics distinguished them from healthy testees. The MVP patients were cautious when analyzing events and pessimistic in their views of reality; they also tended to complicate situations. This set of characteristic features and their peculiar combination testify to an enduring state of emotional tension, which is known to have a negative impact on health. As is noted in some works on the subject, people displaying such emotional personality features may be highly sensitive to psychological stressors.

Results of the tentative stage defined the logic and direction of the study, its aims and tasks, for all further stages.

The *second stage* consisted of experimental stress modeling. A situation was set up that induced a state of mental tension. It was conducted through observation of the level of pretensions (Borozdina, 1986; Hoppe, 1930)⁵. The hypothesis was that MVP patients differ from

⁵ In the course of the experiment participants were asked to solve 12 problems. As stimulating material Raven's Progressive Matrices were used, series D and E (Raven, 1936; Raven, Raven, & Court, 2003). The selection of the most difficult, almost unsolvable problems was stipulated by the very purpose of the experiment: to set up a stressful situation. In a preliminary interview a motivated attitude toward the work was formed among the participants, and the experiment was presented as a test of expertise. A time limit was set for task fulfillment. Subjective-evaluative, physiological, and behavioral characteristics were traced. The arterial tension of the participants and their cardiac rates were checked before and after the experiment, as well as values on the Spielberger-Hanin reactive-anxiety scale (Hanin, 1976; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) and on the self-rating test of a functional condition (Doskin, Lavrenteva, Miroshnikova, & Sharaj, 1973).

healthy people in the quality of the mental states generated by a stressful situation.

Summing up this stage of study we may assert that all participants (both sound and unhealthy) exhibited a state of mental tension under the conditions of the stress-modeling experiment (Ganzen, 1984; Nayenko, 1976). In addition, a qualitative analysis of the data showed that most of the healthy participants (84%) experienced (during the modeled experiment) the state of operational tension (characterized by the dominance of the content-procedural motivation when undertaking tasks and an optimal level of situational anxiety); most of the MVP patients (76%) experienced the state of emotional tension (characterized by the dominance of self-assertion motivation and pronounced situational anxiety). Qualitative peculiarities and the dissimilarity of the experienced mental states were verified by a complex of psychological and vegetative criteria. It should be pointed out that the MVP group was not homogeneous; they demonstrated two opposite reactions that, for the most part, were not found in the group of healthy participants; these were “repressive” reactions, with an understated, rigid level of pretensions (28% of cases), and “overanxious” reactions, in which pretensions either were not present under the conditions of the experiment or were unstable (34%). Both these ways of reacting are ineffective for reducing emotional tension.

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

All these tasks were covered in the *third stage* of our study. We checked the hypothesis that MVP patients differ from healthy people in having higher sensitivity to traumatic events, peculiar ways of resolving emotiogenic situations, and a tendency to suppress concomitant feelings. Besides, the categorial structure of the emotional experience of MVP patients differs from the emotional experience of healthy participants.

The empirical tasks in this stage were accomplished through observation of reactions to frustration (Rosenzweig, 1945; Tarabrina, 1984) – a method we specially modified for our study, having previously includ-

ed in it observation of the subjective semantics of emotional experience (Nikolaeva, Pervichko, Stepura, & Rolik, 1995)⁶.

The results showed that the MVP patients differed from healthy people in having a larger number of events that they regarded as potentially traumatic ($p < 0.05$) and having a larger number of selected emotional descriptives ($p < 0.05$). Besides, in the categorical structures of the emotional experience of the MVP patients there was greater frequency ($p < 0.05$) of the emotional categories of “fear” and “anger,” which hardly ever had an outward expression.

As showed by the results, the MVP patients substantially differed from the healthy people in, among other things, the character of their resolution of “potentially traumatic” situations, which were characterized by a pronounced dissociation between the focus and the type of verbalized and nonverbalized reactions. These discrepancies showed up to a greater extent in a subgroup with “repressive” types of reactions. In their overt behavior, these patients were prone to react to a frustrating situation as if it were nontraumatic (M-directed reaction) and to overdo their alacrity in overcoming the problem and achieving its construc-

⁶ The method had three stages:

In the initial stage the participants were asked to put themselves “into the shoes” of a character who is addressed with certain words by the interlocutor. They had to look through a succession of pictures illustrating certain frustrating situations, read the words of the interlocutor, and select the situations that, from their point of view, might be traumatizing.

As a next step (the second and third stages) the participants were presented in turn with each of the situations they selected.

In the second stage they had to assume the role of a certain character and answer the following questions:

- Why did you pick this particular situation as being traumatizing? What makes it particularly traumatic for you?

- What would your retort be in this particular situation?

- What would you think about, saying this?

In the third stage participants were provided with 73 cards with the names of emotions written on them. They were asked to select the words that unambiguously expressed their feelings in the situation in question.

The following parameters of emotional experience were assessed: sign, modality, depth, duration, and stability of emotions; the degree of intension of emotional manifestations in their behavior; the degree of discrepancy between verbalized and nonverbalized emotional reactions.

tive resolution (NP-type of reaction). But the nonverbalized reactions of these patients demonstrated the opposite tendencies in getting over such situations – specifically, extrapunitiveness (E) and a fixation on self-defense (ED).

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

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

To check this hypothesis, we conducted further research at the *fourth stage* of our study. We undertook an analysis of the coping strategies of the participants in emotiogenic situations with the aid of the Ways of Coping Questionnaire (WCQ) (Folkman & Lazarus, 1988; Vasserman & Schelkova, 2003) and an authorial questionnaire, Critical Situations.

Results of this stage vividly proved that MVP patients, in contrast with healthy people, use “evasion” of problem solutions as the most frequent way of resolving situations and resort to emotionally disorganizing and emotionally defensive coping strategies. These facts confirm our hypothesis about the specificity of the need-motivation sphere for the majority of MVP patients when the structure of the achievement motive is shaped into domination of the failure-avoidance motivation. This finding reveals the urgency of making close observations of the personality features of MVP patients.

This task was accomplished in the *fifth stage* of the empirical study. The following methods were used: the Thematic Apperception Test (Leont'ev, 2000; Murray, 1943/1971; Sokolova, 1980), the Sentence Completion Test (Rumyantsev, 1969; Sachs & Levy, 1950), and the Plutchik–Kellerman–Conte Quality of Life Index questionnaire (Plutchik, Kellerman, & Conte, 1979; Vasserman, Eryshev, & Klubova, 1999).

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

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

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

The factor analysis (which included 120 psychological and clinical characteristics selected according to the results of the qualitative analysis of the data collected in all stages) featured four factors that accounted for 52.47% of dispersion and that related all analyzed characteristics to each other:

- 1) the factor of clinical-psychological interplay (the only one among other established factors that showed maximum loading, covering both psychological characteristics of the MVP patients and indicators revealing the profile of clinical symptoms and signs);
- 2) the factor describing the characteristics of their emotional experience in emotiogenic situations;
- 3) the factor displaying their ways of coping in traumatizing situations;
- 4) the factor of emotional disorganization of behavior / emotional control.

Qualitative analysis of this factor structure and analysis and interpretation of the whole set of the results of the clinical-psychological study lead to the conclusion that MVP patients possess a steady, meaningfully interpreted complex of clinical and psychological symptoms and syndromes that may be defined as a psychosomatic syndrome.

This syndrome comprises the following clinical symptoms and syndromes: subjective manifestations of cardiac arrhythmias, panic attacks in anamnesis, the syndrome of neurogenic hyperventilation, some degree of intensity of vegetative disorders, some degree of intensity of clinical disorders, severity of pain syndrome, and indicators of serum cortisol level. The syndrome structure is statistically formed by the following psychological symptoms: domination of the motive of failure avoidance, unsatisfied self-approval need, a complex of indicators of overt emotional tension in stress situations, insufficient or excessive control over motivations and emotions, characteristics of the emotional experience in stress situations (domination of the emotional categories “fear” and “anger,” which in most cases reveal no outward expression), suboptimal means of resolution of emotiogenic situations.

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

The persistent combination of the described features of the need-motivation sphere, with insufficient control over motivations and emotions and suboptimal ways of resolving emotiogenic situations, and certain peculiarities of the emotional experience of MVP patients in stress situations (all these characteristics are represented by high factor loadings in the resulting statistical factor structure) suggest that the structure of this psychosomatic syndrome features one more factor: dysfunction of emotional regulation. Furthermore, this factor, being bipolar, is represented in two extremes: on the one hand, excessive emotional repression, and, on the other, insufficient emotional control. We cannot exclude the presence of one more factor, the psychophysiological one, in the structure of the syndrome. This suggestion seems to be apt because the psychovegetative syndromes and signs are highly represented in the resulting factor structure.

The results achieved (the construction of a psychosomatic syndrome) lead us to suggest the following: if the described structure does, in fact, form a psychosomatic syndrome, and if the symptoms of it are causally related, the structure should be relatively stable in time, it should be likely to replay, and it should reveal prognostic perspectives.

To verify the hypothesis, 15 years later a longitudinal observation and clinical and psychological reexamination of the MVP patients was conducted. Some patients underwent on-request psychotherapy during the period (32 persons); 60 patients received, by prescription, courses of pharmacological treatment (magnesium orotate, alprazolam).

Reexamination of the patients demonstrated that the psychosomatic syndrome in question has a stable structure, despite positive or negative dynamics in the patient's state. This feature sets the prognosticating perspectives. The patients assigned to the "risk group" for plausible symptomatology complications in the clinical and psychological signs described above, as well as the whole complex of clinical and psychological features, confirmed our expectations of the "hardening" of clinical MVP manifestations under conditions of emotional pressure when medication and psychological aid were not provided. Meanwhile, psychologically "safe" patients displayed generally positive dynamics and a reduction of MVP signs in a number of cases.

Thus, a psychosomatic syndrome in MVP patients was described in accordance with the principles of the syndrome-factor analysis of psychological phenomena, developed in Russian psychology by the Vygotsky-Luria-Zeigarnik school. It was demonstrated that the syndrome has a multilevel character and that its structure is determined by a number of factors: the motivational factor (dominated by the failure-avoidance motive and the unsatisfied self-approval need); the factor of emotional regulation of disorders, represented by both excessive emotional repression and deficiency of emotional control; and a psychophysiological factor (dysfunction of the vegetative nervous system).

Suggestions for Further Research

The results of this research not only extend the scientific conceptualization of the nature of MVP – a heart pathology that occurs frequently – but also contribute to the formulation of new questions, which is exceed-

ingly important for the organization of further studies in present-day clinical psychology.

One current concern is for the implementation in experimental psychological studies of new technologies aimed at gaining accurate and profound knowledge of cognitive and emotional processes and of personality characteristics and behavioral features. Among such technologies are means for detecting concealed knowledge: biological feedback, the newest medical/biological methods (in particular, functional magnetic-resonance imaging), as well as virtual reality. The system of virtual reality installed at the psychology faculty of Moscow State University, which is furnished with psychophysiological equipment and is connected to the clusters of the supercomputer Lomonosov, has been actively employed in scientific research conducted at the faculty. A complex of psychophysiological data collected from a participant is placed in a CAVE (cave automatic virtual environment) installation, and his/her behavioral reactions and efficiency of task accomplishment are determined. The set of parameters enables a rather exhaustive description of the dynamics of the patient's mental state, depending on the activity settings. A data folder is sent (via the control center) to the supercomputer, where the whole block of records undergoes real-time processing, and activity settings are modified in accordance with the results of the analysis.

Not only does virtual-reality technology expand the range of methods in the diagnostics of mental processes and states and the study of mechanisms of their functioning through the construction of multi-dimensional math models, but it also allows the development of new methods for psychological treatment and recovery, which makes it exceedingly important for present-day psychology and medicine (Attree, Rose & Brooks, 1998; Bordnick, Traylor, Graap, Copp, & Brooks, 2005; Brooks, Attree, & Rose, 1997; Bullinger et al., 2005; Calhoun, Carvalho, & Astur, 2005; Rose, Attree, Brooks, & Andrews, 2000; Schultheis, Himelstein, & Rizzo, 2002; Zinchenko, 2011; Zinchenko, Menshikova, Bayakovskiy, Chernorizov, & Voiskounsky, 2010). To be specific, the work of Y.P. Zinchenko and his co-authors bears witness that virtual reality may be employed as a nonpharmacological anesthetic. Its efficacy may exceed that of the traditional opioid painkillers; this effect was observed in patients with severe skin burns.

The use of virtual-reality technology in clinical-psychological studies sets a vivid example for cross-disciplinary research in that not only psychologists and physicians but also physiologists and mathematicians contribute to the general project.

Another concern, which has been raised in the course of data processing, is the need for new mathematical methods that can enable us to step beyond mere data analysis of empirical studies and strive for prognostication of the further evolution of complex, self-developing systems. Here we should turn our attention to fractal geometry or fractal modeling and data processing – a mathematical method developed by Benoit B. Mandelbrot on the basis of ideas about postnonclassical rationality suggested by Prigogine (Mandelbrot, 1982). The method allows modulation of the dynamics of chaotic processes and is believed to be useful in applying to the description of investigated reality the dynamics of various self-developing systems, like population models, for example, as described by C.A. Pickover, J. Gleick, and H.O. Peitgen. The matrix array that we developed in our study, the character of the data obtained, as well as the original purposes of the investigation (which boil down to two principal points: to establish a connection between the psychological features of MVP patients and the particularities of their clinical performance, and to reveal the role of psychological factors in structuring clinical symptoms and signs) – all these factors suggest the heuristic features of the application of fractal analysis modeling to the description of investigated reality (the negative/positive progress of a disease in a patient) and to the prognostication of its further evolution. This branch of study may form the subject of our scientific interests in the near future.

Conclusions

First, concepts that have emerged in present-day philosophical science allow us to distinguish the types of scientific rationality (classical, nonclassical, and postnonclassical). These concepts may be employed in assessing the establishment, evolution, and further development of psychological science as well as in determining the theoretical and methodological principles of the functioning and development of the separate branches of psychology, clinical psychology in particular.

Second, the object of clinical-psychological study is a complex, self-developing system, capable of selecting the aims and purposes of its de-

velopment and the criteria for their achievement and of reestablishing its parameters, structure, and other features within the course of development. These characteristics imply a methodological scheme of research, congruous with the complexity of the object. Psychological syndrome analysis, as a system of principles for conducting a study and interpreting its results, is in tune with the epistemological multiplicity and complexity of the subject of clinical psychology, considered from the perspective of the postnonclassical academic view.

Third, the psychosomatic syndrome of MVP patients was described in accordance with the general scientific principle of systematization, the principles of the postnonclassical paradigm in science, and the principles of the syndrome-factor analysis of psychological phenomena, which was developed by the Vygotsky–Luria–Zeigarnik school. It was demonstrated that the syndrome is system-defined and has a multilevel character and that its structure is determined not by a single factor (as is typical for neuropsychological syndromes) but by a number of factors: the motivational factor (with domination by the failure-avoidance motive and the unsatisfied self-approval need); the factor of emotional-regulation disorders, represented by both excessive emotional repression and a lack of emotional control; and a psychophysiological factor (dysfunction of the vegetative nervous system). Results of the empirical study, which was conducted within the framework of postnonclassical philosophy and with the methods of psychological syndrome analysis, not only expand the scientific background on the nature of a particular disease (MVP) but also pose further questions whose investigation will broaden our view of the psychological mechanisms of psychosomatic-syndrome genesis.

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