SYSTEMIC LOCALISATION OF THE SUBJECT IN PSYCHOLOGICAL RESEARCH: STRUCTURAL AND ONTOLOGICAL VISUALISATION

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Abstract. The article proposes systematisation and development of the discourse of the East European methodological traditions regarding application of the systematic approach as a way of subject localisation in psychological research. In particular, the author's version of systematic localisation of psychological research subjects by means of structural and ontological visualisations has been developed. The procedure proposed for systematic localisation of the researched subject includes four subsequent stages: 1) fixation of the borders and structure of the ontological field which is being studied; 2) segment analysis of the obtained structure; 3) study of specifics and contents of structural and functional ties; 4) visual mapping of genesis of the core processes. The article describes specifics of application of systematic localisation of the subject of research at the example of such researched object as personal socialisation.

Keywords: methodology, systematic approach, research subject, research object, structural and ontological visualisation.

Introduction.

Determination of the subject in psychological research (hereinafter referred to as the "subject") is one of the central issues in the methodology of the respective area. The subject is traditionally considered in the context of the object which is defined as a higher category by the modern research-on-research studies. "The subject of the research lies within the framework of the object. The object and subject of research as categories of scientific process

are correlated as the general and the specific. The object contains the component which constitutes the subject of research" (Kovalchuk & Moisieiev, 2008, p. 106).

This correlation is mostly perceived by wide scientific community as an axiomatic statement in view of categorical uniformity of most definitions on this issue. Probably because of this, the subject is sometimes determined in a kind of mechanical manner. In other words, any "particular" item separated from the "general" one by means of formal logic may be theoretically deemed the subject.

This raises the issue of structural place of the subject determination in the psychology methodology. Specifically, what element thereof does this process pertain to: a regulatory methodological one or a descriptive methodological one? In the first case, respective regulatory methodological tools need to be developed. In the second case, it is a question of reflection of original research-on-research studies sources of the modern methodological discourse. In our opinion, localisation of the subject is the process, which involves both elements, i.e. there is a present concern about combination of the methodological regulation and reflection, which allow for structural segregation of the subject from ontology of the object of research.

What are the present-day scientific views on the connection between two methodological categories, the object and the subject? As it has already been stated, this connection provides for contextuality and casual sequence. Some studies also describe the subject in terms of "relation" to the object. "Scientific research methodology has notions of the "object" and "subject" of cognition. The cognition object is what the cognitive activity of the researcher is aimed at, and the cognition subject is the attributes and relation to the object that are being studied" (Bilukha, 2002, p. 51).

Attention is often focused on the process and/or phenomenon, "Object of scientific

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research usually means the process or phenomenon which creates a problem or requires deeper studies. The subject is a phenomenon or process within the framework of the object which is considered as an element, a part of the research object (Stechenko & Chmyr, 2007, p. 50).

Another opinion associates the subject with the reproduced model of the object, which contains respective ties and relations. “Object of research is a process or phenomenon, which creates the problem and is selected for research, and subject of research is theoretical reproduction of these essential ties and relations to be studied” (Konverskyi, 2010, p. 49).

These definitions are mostly equivalent and, to our mind, they unintentionally precondition rather controversial methodological recommendations as to coincidence of the subject with a research issue, “Subject of research is attributes typical of scientific cognition studied for a certain purpose. It is determination of a certain “perspective” of the research as an assumption on the object attributes which are essential for studying the object. The subject of research lies within the scope of the object and always coincides with the research topic” (Tsekhmistrova, 2004, p. 47).

From our point of view, successful generalisation of the foregoing is the following general methodological stance, “Object of research is an element of the surrounding world which objectively exists, has an indefinite number of attributes, ties and relations, which poses certain interest to the researcher. Subject of research is a clearly determined part (attribute, tie, relation) of the object to be studied” (Malanov, 2005, p. 35). This version is more heuristic due to emphasizing the object and subject triad, “attribute – tie – relation”. As a natural result, comprehension of this aspect makes the prospect of application of the systemic approach to localisation of the subject in psychological research topical.

The purpose of the article is to systematise and further the discourse as to application

of the systematic approach as a means of localisation of the subject in psychological research and presentation of the author's alternative of structural and ontological visualisation for the given purposes.

Systematic approach through structural and ontological visualisation.

It is generally accepted that the debut of the use of a systematic approach to psychology related to the theory of open systems (Bertalanffy, 1950, 1968). The theory had been developed in the works of Allport (1954), Miller (1978) and Parsons (1951). On the other hand, the prospects for a systematic approach in psychology were largely prepared by the works of Lewin (1936). According to Ganzen (1984), a reputable researcher into systematic descriptions in psychology, the fundamentals of the contemporary systematic approach are presented in the works of Ananiev (1969), Kuzmin (1982) and Lomov (1975) quite comprehensively. However, we prefer the scientific tradition of systemology-based views of the outstanding methodologist Shchedrovitsky (1966, 1982, 1995).

According to Shchedrovitsky (1995), "the notion of the system provides for, firstly, presentation of the research object by means of four principal existence layers: (1) processes, (2) functional structures, (3) organisation of the material, (4) morphology, and, secondly, determination of certain correspondence between the structure of layers: for instance, a functional structure layer is a special form of recording of respective processes in our knowledge, and a material organisation layer, as is evident from its name, represents a kind of "traces" of processes in a certain material, an aggregate "path" trodden by previous processes and directing the subsequent ones".

This systematic representation of the research object provides for deep methodological reflection and, to our mind, may be used as a structural framework of the

regulatory process of distinction and formation of the subject. As you can see, it is a complicated multi-level gnoseological task, solution of which is proposed to be called *systematic localisation of the subject.*

It should also be noted that insight into the rich scientific heritage of G. P. Shchedrovitsky remains open as hardly any detailed "methodological templates" and "methodological algorithms" which would allow adopting fundamental conceptualisation of the scientists for applied research exist to date. With account of the foregoing, on the one hand, it is difficult to avoid methodological errors when determining not only the subject, but also important elements of any research such as the purpose and objectives, development of the research method, substantiation of methods and empiric selection etc. On the other hand, free interpretation of the "systematic approach" creates a kind of a tautological problem: there are numerous "systematic researches", results of which are often contradictory and prevent development of scientific theories without internal conflicts. The solution for this, figuratively speaking, deficiency of systematic nature is to develop respective methodological procedure of localisation of the subject, the first step of which, to our mind, must be gnoseological establishment of the framework and structure of the object of research (system).

To this end, it is proposed to develop such an image of the object, which would open up its ontology in the context of the organisation of the material, which results from structure preconditioning factors of the system, processes in particular. "The issues of how the processes we encounter in reality are and can be represented requires special consideration <...> Representation of the process in the common canonical forms has many serious drawbacks; in particular, inevitable *representation of the process as the object* leaves the researched object itself aside (especially if the process is represented as changing attributes).

Therefore, to be able to correlate representation of processes with objects they pertain to, special *structural images* are used. Therefore, representation of the object as a structure must conform to representations and descriptions of the process, on the one hand, and representations and descriptions of objects as "things" or, in more general terms, objects as tangible items, on the other hand. Taking into consideration the foregoing functional characteristics of structural representation, it can be said that the structure itself is a *frozen representation of processes* in any case from any direction; simply put, *a structure is a statistical presentation of a process*" (Malanov, 2005, p. 258).

What must structural representations consist of? Regarding analysis of the notion of the system according to Shchedrovitsky (1995), we would like to emphasise interconnection between the functional structure and processes which, on the other hand, leave "traces" in the material. In turn, it results in respective organisation of material and finally preconditions system morphology. Therefore, primary system factors are a ***process*** and ***material***. From our point of view, these are the categories that should be a basis of structural representation of the object for subsequent systematic localisation of the subject. At the same time, both the *process* and the *material* are dialectically interconnected elements of the ontology of the object and represent its dynamic and statistical sides respectively. Consequently, structural representation must provide for differentiation of these categories and demonstrate their dialectical interaction at the same time.

One of the simplest drawings visualising connection between two equivalent factors is the so-called visualisation of the Cartesian coordinate system. We suggest using this graphic logic as a procedural tool for visualising the systematic factors: *material* (horizontal axis) and *processes* (vertical axis). In fact, its actual plotting is the first step of the process of the structural and ontological establishment of the object as a means of systematic localisation of

the subject of research. At this stage, an applied issue of determination and specification of the horizontal and vertical axes is crucial. The most important precondition thereof is to understand the methodologically "correct analytical presentation of the object" according to Shchedrovitsky (1995).

"Each functional structure and each organisation of the material must correspond to one consistent process subject to correct analytical presentation of the object. If some other processes exist (or appear) in the object, such processes interact with the organisations of the material that establish the first process, which leads to changes in and transformation of both processes and organisations of the material in such a manner that correspondences appear between them and the other ones: organisation of the material gets more *complex and multi-functional,* whereas each process (or type thereof) has respective specific fragment and special structure of organisation of the material. Therefore, organisation of the material in the *complex system* is structured in such a manner that it simultaneously conforms to various processes and establishes their co-existence and interaction in one object" (Malanov, 2005, p. 500).

It should be noted that, firstly, the requirement for *process* consistency covers the respective attribute of the *material*. Secondly, in this case the concept of consistency is not relevant to such concepts as unitariness, singularity etc. The closest synonyms are homogeneity and isotropism. Rather than limiting potential opportunities of systematic localisation of the subject, this serves as a means of regulating representation of the *subject* and preventing excessive and unsubstantiated build-up of elements resulting in methodological confusion and, thereof, theoretical inconsistency of knowledge gained from respective research. In other words, on the one hand, we believe that the *subject* of the specific research (or a stage thereof) should be regulated for the abovementioned purposes.

On other hand, in certain cases (extensive and/or complicated research) the *subject* matter thereof must be specified, supplemented and adjusted at different stages. However, this issue requires separate methodological discourse.

A Case Study: Personal socialisation.

Identification of the *material* and the *process* at the initial stage of development of structural and ontological visualisation is be considerably preconditioned by the theoretical framework of the research and objectives thereof. Let us consider the following example for more detailed examination of specifics of determination and specification of the horizontal and vertical axes. It should be emphasised, however, that this example as a way to demonstrate procedural aspects and is not to be deemed a solution of the applied methodological issue. So, let us assume that the research object is personal socialisation, and the core of the theoretical basis of the research is views of Petrovsky (1984, 1996) regarding social determination of the socialisation process and respective personal changes. It is well-known that the scientist emphasizes the relations between an individual and a group and, while recognising age development as dominant, believes that transfer to a new stage of personal development is determined by external (to the individual) factors, i.e. social factors.

In this case, the horizontal axis may be defined as “individual – society”. Why is the dyad connection proposed instead of the monistic “individual” position? As the researcher is interested in the material of the system in the context of organisation thereof (*process*), the horizontal axis must represent not only the *material* itself, but also establish domain (ontological dimension) where it is organised and/or represent respective environmental conditions, factors etc. In other words, construction of the horizontal axis provides for determination of such dichotomy which would give answers to the following conventional

questions: “WHAT?” is the *material*? “WHERE” or “WHEN” is it organised?

The dichotomy principle is also used to build the vertical axis, which represents the consistent process and must contains answers to the following conventional questions: “WHAT” is the *process*? “HOW” or “OWING TO WHAT” does the *material* gain certain organisation? In our example an alternative vertical axis may be as follows: “natural needs – cultural needs”, i.e. it represents internal intentionality of the system, its global driving forces, which act in the abovementioned domain and can be regarded as a primary, i.e. core *process*.

As it has been stated, the theoretical framework of the research is a source of cognition of the core axes. Therefore, the respective classification developed by Petrovsky (1976) who suggested differentiating needs by origin and subject thereof has been used to identify the vertical axis. In our case, understanding the need in the context of its subject, i.e. in the motivational meaning, will result in the abovementioned warning of Shchedrovitsky regarding such presentation of the process as an object which would leave the researched object itself aside due to numerous changing attributes, i.e. excessive variability of subjects of needs.

Therefore, from our point of view, differentiation of needs by origin into natural and cultural ones developed by Petrovsky (1976) is more suitable for the purposes of this discourse. “Natural needs represent vitalising activities of an individual, dependence on the conditions necessary to preserve and maintain his/her life and life of his/her offspring” (Petrovsky, 1976, p. 104). On the other hand, the researcher makes an important statement on natural needs which explains the possibility and expedience of their consideration in the context of personal socialisation. “Although natural needs remain the same (as a checklist) as they used to be in the times of our animal ancestors and primitive people, at their core they

are totally different from animals' natural needs. <…> Cultural needs represent dependence of human activity on products of human culture, and origin thereof is fully within the framework of human history. Objects of cultural needs include both items which serve as a means of satisfying any natural need within the framework of a certain culture (knives and spoons, chopsticks) and items which are necessary for complicated and diversified human life. <...> If cultural needs are not satisfied, a person does not die (the way it happens when natural needs are not satisfied), but the part that makes his/her a human suffers greatly" (Kuzmin, 1982, p. 105).

Perpendicularity of the core axes represents "cross" interaction of respective factors which collectively precondition the general dynamics of personal socialisation. We believe that this interaction determines organisation of the *material* of the system that already appears to be complex and multi-functional at this stage of our discourse. When they intersect, the core axes form the four-segment functional structure (Fig. 1). Each segment represents a specific aspect of the organisation of the *material*. The segments collectively form the system's morphology. Determination and description of segments and specifics of interaction in the *process* and *material* connection is the second step of structural and ontological establishment of the object as a way of systematic localisation of the subject of research.

The first segment represents *organisation of the material* associated with the sphere of the individual's needs. This segment covers the part of the *process* which is preconditioned by the individual formula of biological needs. Structure of the individual's needs equation and its specifics precondition organisation of the *material* within this segment. The second segment contains an element of the *process* which is preconditioned by the value part of the individual's intentionality. Organisation of the *material* is associated with specifics of the sphere of values. The third segment is associated with organisational impact on the *material*

of the system (driven by intentional factors, related to both needs and values) owing to a range of social and economic conditions (under which the *process* is developing). The fourth segment is like the third one and represents contribution of cultural and historical specifics of the environment where the *process* is developing.

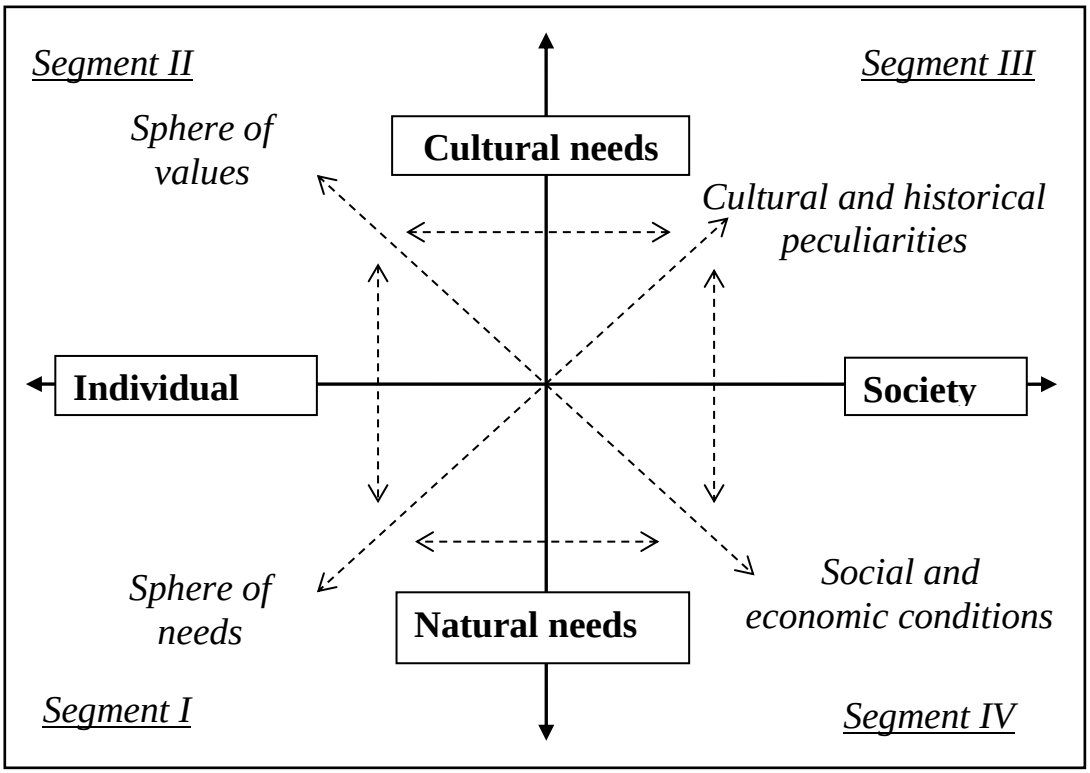

Fig. 1. Structural and ontological visualisation of personal socialisation as a system.

Following the given segment differentiation, as a part of the third step of structural and ontological establishment of the object as a way of systematic localisation of the subject of research, inter- and cross-segment ties must be analysed (shown with a dotted line in Fig. 1). The purpose of this analysis is to find out whether there are other processes that are different from the core one (or are secondary thereto), but have impact on functional structure and organisation of the *material* of the system. To our mind, these processes must be studied

separately. In fact, we suggest determining the subject of the specific research or separate stage thereof by localising the "first" or "primary" *process* according to Shchedrovitsky (1995), which acts as a leading core factor. At the same time, it should be noted that there is an indefinite number of methodological opinions on the subject within the framework of a certain object of research. In other words, the secondary process of one system may be a primary one in another. Or different primary *processes* may be isolated in the same system, however, they will constitute different scientific researches. It emphasizes the importance of the issue of combining knowledge obtained from such "related" researches, however, consideration thereof is beyond the scope of objectives of this article.

Regarding to the primary *process*, we would like to remind of the abovementioned stance of Shchedrovitsky (1995) that all other processes in the complex system "interact" with organisations of the *material* that establish the first *process,* during which both processes and organisations of the *material* are transformed. In the end, it results in establishment of conformances between them and operation of the complex system in general. In addition, determination of the primary *process* preconditions the logic and order of research into the genetic aspect of the system, i.e. mechanisms and regularities of development thereof, which is discussed below.

The fourth step of structural and ontological establishment of the object as a way of systematic localisation of the subject of research is visualisation of the unfolding of the primary *process*. In our case, its debut is related to the first segment and constitutes adaptational activity of an individual. This conclusion is based on the theoretical framework of the research which is, in our case, represented by the views of Petrovsky (1996). He believes that for each age period, the activity-medicated type of interrelationships the child has with the group of most reference during this period is important in addition to the specific

(main) activities. These interrelationships are mediated by the contents and nature of activities and communication preconditioned by this reference group (Petrovsky, 1996).

Right after birth, the contents and nature of the given activities are related with the baby's biological adaptation in specific social and economic conditions, so the *process* is unfolded in the direction from the first to the fourth segment (Fig. 2). This direction of the *process* preconditions respective development of the organisation of the *material* (line 2, Fig. 2). Therefore, the initial condition of the *material* is "folded" and actually corresponds to the first segment, and the rest are only potential. Organisation of the *material* in the first segment (line 1, Fig. 2) is equivalent to inborn characteristics of the individual's needs. Gradual "advancement" of the *process* entails development of the system which is accompanied and simultaneously preconditioned by relevant changes in the organisation of the *material* (in the order of increase in line numbers in Fig. 2). At the same time, it should be noted that development of the system is more complicated than the graph we have presented. Both at the level of the *process* and organisation of the *material*, genesis is cyclic, based on the spiral principle with gradual increase in the radius thereof (first it is located within the first and the fourth segments, then the first, the fourth and the third ones, and then it takes up all the conventional area of four segments after a while).

The system is fully "unfolded" when successful biological adaptation in specific social and economic conditions and gradual interiorisation of cultural standards is followed by development of the individual's values, which finally precondition or at least have impact on adaptational activity in relation to satisfaction of needs (for instance, conscious choice of the healthy lifestyle). According to Shchedrovitsky (1995), at each transitional period of this unfolding, there is complicated transformation of the *process* and organisation of the *material* of the system, i.e. socialisation dynamics which turns an individual into personality. From our

point of view, scientific establishment of facts of the given transformation, finding out and studying of its specifics, mechanisms and regularities are components of the subject of research into personal socialisation.

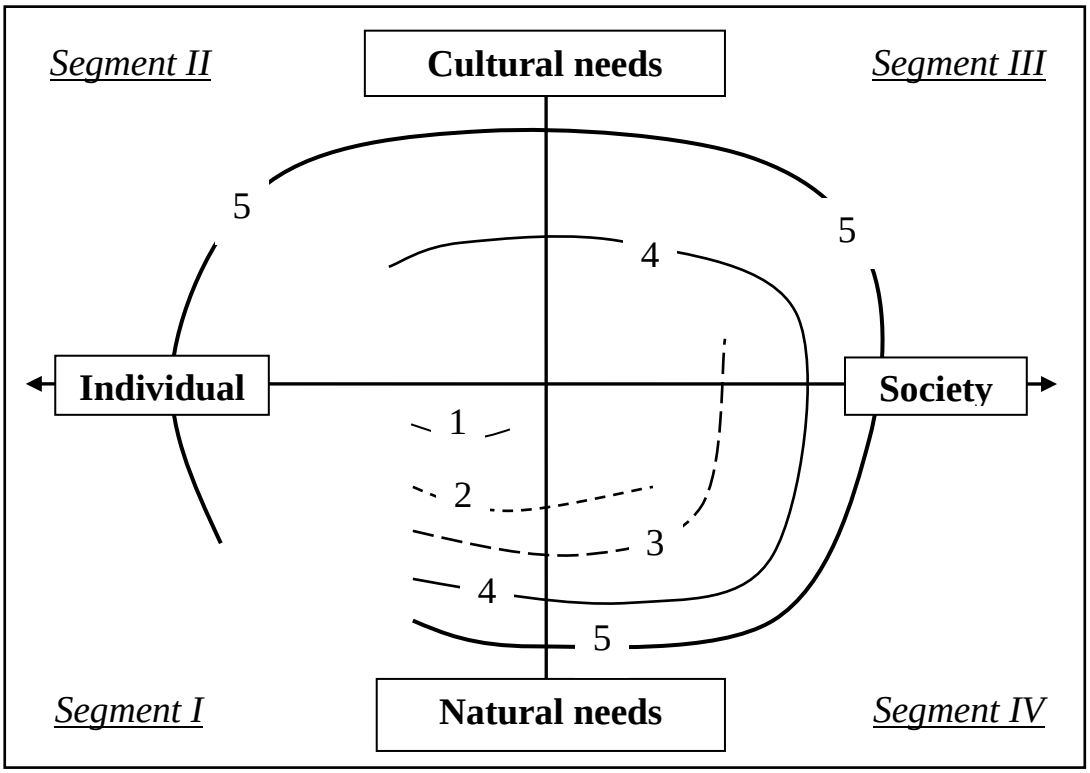

Fig. 2. Mapping of genesis of the primary process and transformation of organisation of the material of the system.

Conclusion.

To generalise the presented discourse regarding application of the systematic approach as a way of localisation of the subject in psychological research, we suggest applying the author's structural and ontological visualisation method comprised of the following four stages for the given purposes:

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1) Gnoseological establishment of the framework and structure of the object of research (system) by forming representation of the object that presents its ontology in the context of the system's morphology resulting from structure preconditioning factors of the system, i.e. the primary *process* and *material*. For this purpose, visualisation is provided using coordinate axes: the horizontal one represents the *material* and ontological dimension where it is organised, and the vertical one represents the primary *process* of the system which is characterised by isotropism of organisational impact on the *material*.
2) Determination and description of four segments resulting from crossing of the core axes. Segment-by-segment connection of specifics of interaction between the *process* and *material*.
3) Analysis of inter- and cross-segment ties to identify and differentiate processes that are different from the primary (core) one, but have impact on functional structure and organisation of the *material* of the system. These processes are studied separately.
4) Visualisation of the unfolding of the primary process within the framework of separated segments of structural and ontological concept of the object of research.

To our mind, the proposed procedure allows determining and creating visualisation of structural representation of genesis of the system which is accompanied and, at the same time, preconditioned by transformation both of processes and organisation of the material. Evidence of this transformation, specifics, tools and regularities thereof are the scope of psychological research.

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