

Research of semiotic aspect of understanding process in clinical diagnostics

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Abstract. *The sign nature, its function, specific character of applying sign in clinical diagnostics and different aspects of its sense are investigated in the paper. The special attention is devoted of object features, signs – symptoms, diagnostic expressions and terms. That is necessary for the understanding of diagnostic information semantics by the sense extraction from this information.*

Keywords:

sign, semiotic, denotations, clinical diagnostics, understanding, designate object of knowledge, subject of reflection

3 1. Introduction

The major condition in clinical diagnostics efficiency is the ability of doctor for rapid and correct generalization of diagnostic information. However mathematization of diagnostic process which directed on methods development and instrument of inductive generalization do not change its character based on fact, because the necessity of man presence (doctor) - subject of diagnostic process is kept. He interprets the results which are given that increases of its subjectivism [1]. The mathematization of diagnostic process is directed to the methods and tools of inductive generalization development at the expense of computing technologies of pattern recognition development without knowledge processing or semantics of signs and features of the patient's state.

The results of investigation in the area of knowledge proceeding base on sense are offered as a result of diagnostic information understanding. The diagnostic information is the material by which immediately use the clinical thinking. Under sense we will understand some nucleus formation which consists of reduced images, notions and emotions.

For the study of problems understanding it is necessary the notion of sign and its sense. For problem solution of fixing and proceeding of subject knowledge in the context of information approach taking into account the sign notion to make an attempt of semiotic model creating of cardiologic illness of ischemic nature.

4 2. Theoretical Part

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A new view of this approach consists that the result of application of such models becomes available not only computing technology but also technology of sense proceeding. [2,3]. The basic purpose of such models is aspiration to make accessible to the artificial systems «understanding» of image of outer world on base of sign description of semantic characteristic of knowledge objects. By the starting point of analysis of sign and its sense (subject, vivid, emotional, procedure) there is a sign situation. In model expression it is characterized by the aggregate of relations of basic its elements: talking or perceptibly passing, perceiving, object or phenomenon of cognition, sign and representing him thought - forms. On the Fig.1 relations of elements of the sign situation in clinical diagnostics is shown.

Any perceived in the process of clinical diagnostics sign of the state acquires the sense and comes forward already how a sign and symptom provided with sense in the volume of pathogenetic link is only then, when enters into the definite relationships with the article of denotation - illness, showing up through the state of patient and addressee - interpreter: by a doctor or patient. It is the basic postulate of semiotics in clinical diagnostics. In the work the signs were considered as signals of threat of violation of homeostasis, symptoms of compensation adaptation reactions and symptoms, actually, violations of homeostasis. Between the components of the sign situation in clinical diagnostics there can be three types of relations by the studied different sections of semiotics. Relations between signs syntactical are studied, determining the form of expressions; relation of sign to the object of denotation - semantics determining understanding; relation of sign to the interpreter - pragmatic, determining actions of doctor. For the design of clinical thinking process all three types of relations are actually.

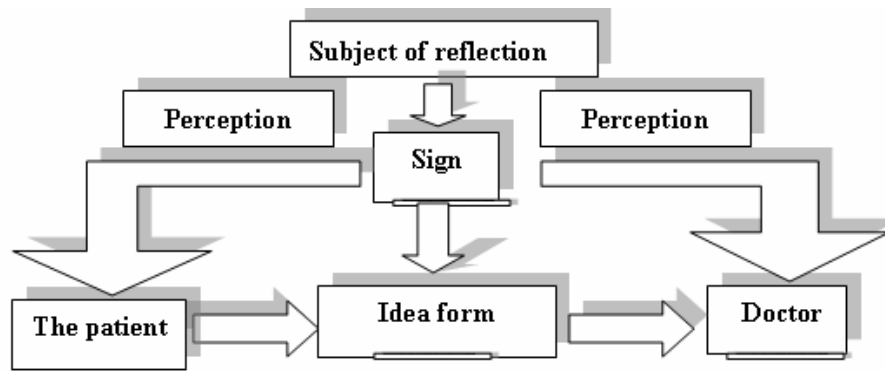


Fig. 1. Relations of elements of the sign situation in clinical diagnostics

However the problem of the clinical diagnostics communication was not fully sanctified, if not to mark its main feature - a doctor has to interpret not only the perceived objective signs and signs of illness, but also results of conducting of their interpretation to the patients. For this purpose it is necessary to own all plenitude of the sign system of patient, translating the subjective signs of his feeling, outspoken in a word to the sense of signs of representing physiological reality of his state and also it is correct to understand the sense of signs representing the object of denotation. How we see, exactness of denotation of symptom in a word in a great deal determines its sense. In this case, a word comes forward already not simply as a sign which the relations of reflection and of objective really combine in, and already, how the function of expression is. Interdependence of such notions, how the reflection, reflection and expression it is shown on the Fig. 2, where a word designates the object of cognition and reflection by means semantic expression in notion.

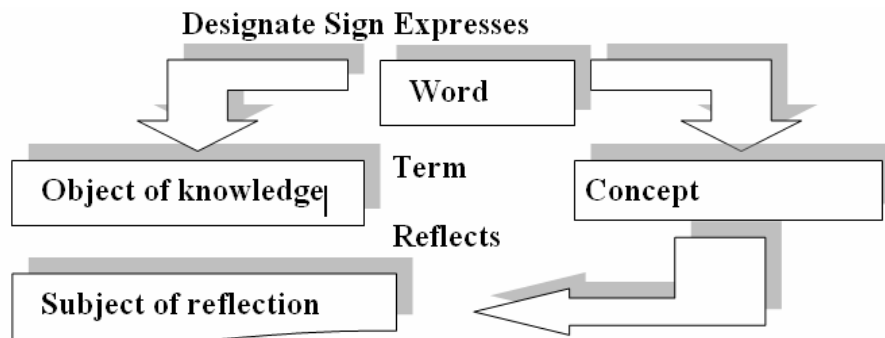


Fig.2. Interdependence of basic conception of sign situation

In connection with that process of mastering of sense are determined by the social functions of personality, and can be described in terms of role its model, the sign system of “internal picture of illness of patient” was considered in notations I. Richi, as the complementary each other following models: technical, sacral, collective and contact types.

Receipt of image, as the finished product of understanding takes place in the structure of perception consisting of sensory and perceptive processes. Taking into account, that except for an eventual result, it can be considered as an algorithm, we will consider all process of reception and processing of sign information in the technological sequence of next stages of clinical diagnostics. The discovery is establishments of fact of presence of object in the sensory field by disarticulation of signal from a noise (establishment of fact of presence of signs of the pathological state of patient). Forming of image, as a contour of hypothesis about a possible diagnosis the distinctions are linked to the stage. Exactly on this stage there is a «demarcation area» dividing sensory and actually perceptive processes of perception constituents.

The process of recoding of sensory models in psychical image is accompanied by considerable abbreviation of information. It is accompanied by satiation of the formed image by relevant information and the level of a priori knowledge is very important. As a result, perception unlike feeling strongly relies on previous experience. The identification is recognition of object perception as perceptive image and establishment of level of likeness with a standard. It takes place in the context of verification cycle of likeness of similar diagnoses, with ranging and differentiation of hypotheses, and ends with attributing of perceptive image of the state to the definite class of pathology. Decoding is the final phase of process of perception, consisting in translation of the perceived signs in units of internal speech, which are related to presentations, and thought on the whole. Translation of perceptive image in the system of presentations means complete interiorization perceived information. The process of interiorization is important to those that for the receipt of image being the condition of understanding and result of the cognitive process

of clinical diagnostics, it is necessary not only actually product of reflection, but also presence of the proper elements of the personal knowledge of subject, and also their capacity for integration with it. Product of understanding, passing censorship estimating processes, as truly proper to the object of reality - sense, after the stage of understanding starts the last stage of process of interiorization as a process of displacing or compression of all knowledge of related to the object of understanding. Deprived of the second details concept, in such kind is comfortable, both for storage and finding of him in memory, and for actualization in process of exteriorization.

His volume, consisting of sum and quality mastered by the individual of knowledge of relevant to the object of cognition, behaves to fundamental descriptions of process of understanding, and also plenitude and depth. Most authors in presentation of plenitude of understanding are linked to attitude all of the understood elements, communications and attitudes toward all present in an object. The depth of understanding is usually linked to the presence of scientific principles, laws and rules realized in the object of understanding. The process of the clinical diagnostics understanding was considered at four conditional level of his hierarchy: syntactic, superficial-semantic, deep-semantic, dialog [4].

By the special clinical diagnostics problem there is the feature of distinction of understanding processes of sign and not sign objects, more faithful, sign and symptom-sign. If in the first case, understanding consists of opening, getting a clear the idea of, interiorization by somebody stopped up in an object sense, otherwise decoding - translation of perceptive image in the system of presentations, in the second case, by comparison, comparisons and et., by the subject of understanding the personal sense which is checked for accordance to the exposed communications and relations bring in the object of cognition. If for sign objects a problem is actual differentiation of hypotheses and a deductive conclusion is possible, for not sign objects - their constructing with subsequent inductive generalization. In any case, understanding in the process of clinical diagnostics comes forward as a condition of translation of the perceived information in the personal knowledge. However if sign codes serve for the primary transmission of sense from which sense is after added up, not sign codes pass mainly sense through image which after with large labour is added to understanding.

Conclusion

One wise man has told: not enough to be able to thinking but it is necessary to be able to do. Thus it is possible to contend that sign notation depends not only from object of sign and level of medical science development but also from station of denotation theory of sign. The process of sign is Starting point of the scientific theory. Therefore translation of descriptive expressions of denotates on the strict language of logic and mathematics is the necessary condition of its development.

Researches have shown that the undeveloping of denotation theory in clinical diagnostics has led to situation when sings has not fixing sense in the system of clinical diagnostics. There are incompleteness of scientific bases of the sign system and absence of enough strict mechanism of its interpretation. Semiotic and semantic directions of clinical diagnostics state almost are not investigated in contrast of semeiological. That is main obstacle for integration of medical knowledge. It is necessary for construction of substantial theory of clinical medicine by strict logical-mathematic description of its semantics in the context of clinical diagnostics semiotic paradigm.

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