

COGNITIVE MODELING OF ACTIVITY AND BEHAVIOR OF SURGEON

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Abstract: *The article considers the cognitive paradigm of activity and behavior of surgeon as the cognizing subject from the standpoint of the system approach. Cognitive model of the surgeon is a very complicated system and requires clarification of all aspects of his medical activity in the subsystems: "surgeon - profession", "surgeon - patient", "surgeon - surgeon", "surgery - society", "surgeon - own self." Combining both epistemological and empirical qualities, the operating surgeon in aggregate of performed cognitive functions actively shows his creativity, increases the level of surgical skill, and introduces innovations in the medical practice. Surgeon improves his professionalism thanks to the use of cognitive mechanisms of adaptation, activation and regulation of the cognitive medical activity.*

Keywords: *Cognitive paradigm, flexible rationality, systematic approach, cognizing subject, surgeon, medical activity, medical cognition, activity, individual and collective subject, cognitive matrix.*

The problem

At the stage of postnonclassical science understanding of the subject has radically changed. New paradigms with the introduction of new approaches and methods of scientific cognition such as synergetic, informational, cybernetic, mathematical, logic and nonstandard, etc., The greatest heuristic potential, in our view, has a modern **cognitive paradigm** for explaining and understanding the activity of the subject, its creative cognitive process from the standpoint of the content, forms and mechanisms of cognition.

Cognitive science as a science about general principles, governing mental processes in the human brain interprets man as a perceptive activity of the subject, actively perceiving and producing information. In a professional activity and in their cogitative activity of the subject of cognition is guided by a specific methodology, including schematics, programs, plans, and strategies.

From the perspective of cognitivism it is of significant interest to identify the features of activities and behavior of a surgeon as one of the most exciting specialties in medicine. We interpret **surgeon** as a cognitive activity of the subject with the greatest creative potential heuristic explanation and understanding of the activity process in their professional field.

Modern medicine is a vast and deeply differentiated branch of scientific knowledge. The *object* of its study is people. Its medical knowledge is historically closely connected with philosophy, which also examines the man, his nature and essence. From antiquity over two thousand years doctors have developed sustainable thinking need for a holistic (volumetric) view of the system of bodily-spiritual nature of man.

But a doctor himself, as a subject of activity, behavior and cognition, is the object of science.

Methodology of Flexible Rationality

Methodology flexible rationality is applied to study the characteristics of the activity and behavior of a surgeon, revealing the correlation of rational and irrational in cognition, many of the nuances of the cognitive paradigm for interdisciplinary research of the subject.

We consider **flexible rationality** as a form of scientific rationality, taking into account the pre-logical and anthropological features of the cognizing subject [4]. The application of flexible categories of rationality is especially important for the analysis of *intermediate* stage of the subject activity, a stage of *finding a solution* to a specific problem.

The nature of the cognizing subject is ambivalent: in its psychological "matrix" of knowledge it is represented in at least two differential slices – *experiential (ontical)* and *epistemological*. At the same time, a man is an integral (holistic) subject of cognition in its third hypostasis, in which he synthesizes his dual biosocial nature.

Thus, from the viewpoint of post-non-classical science the nature of the cognizing subject is expressed in its dual functioning as an *epistemological-ontical* subject:

A) the carrier of the rationality (epistemological subject),

B) media irrational - feelings, emotions, desires, moods, intuition, faith, doubt, will, etc. (as an ontical subject).

Subject, intuitively using in its activities the knowledge and irrational form as a cognitive instrument, discovers a variety of opportunities for obtaining new knowledge about the object and about itself as a cognizing subject, its cognitive capabilities and abilities. This is the cognitive potential of the subject in any kind of activity.

The activity of a surgeon as a system

The activity of a surgeon is a *medical activity*. It is carried out by a doctor, a subject and media medical of consciousness, knowledge and the medical activity itself.

The profession of a surgeon applies to the professions of *subject-subject* type. A cognitive model of the surgeon as the perceptive activity of the subject presupposes the clarification of all sides of his medical activities in "surgeon — a profession", "the surgeon — patient", "surgeon - surgeon", "surgeon — society", "surgeon — self". But all these aspects are "closed" in the person of a surgeon. The result of cognitive activity of a surgeon as an open system, dependent on environmental conditions and mating taking into account many factors that affect the adoption of a decision; is a system of meanings, "**cognitive matrix**" of a surgeon. It describes his inner world, the worldview, the attitude, "world perception", performing the role of cognitive "tools". Their cognitive analysis involves the study of socially prescribed, surgical collective knowledge and expertise of an individual surgeon.

System "surgeon – profession"

The specifics of a doctor are determined by the uniqueness of: 1) *object* of study (the sick, the wounded); 2) *tasks* that a doctor has to solve (diagnostic, therapeutic, preventive, etc.); 3) *conditions* of activity, etc. The specifics of surgeon are that he has received training in diagnostic and surgical treatment of diseases and injuries. The etymology of the word "**surgeon**" decrypts the essence of surgical activity: from the ancient Greek. *χείρι* — hand + ancient Greek. *ἔργον* — work, action. That is, surgeon literally "**heals with hands**", really changes the body of a patient, and constructs it in accordance with the logic of treatment adopted by surgeon and the treatment model. In this medical activity, surgeon relies on his theoretical and practical training.

Two levels of knowledge are known — empirical and theoretical. At the **empirical level** of cognition, doctor must fix the processes, phenomena and relationships between them, arrange necessary and accidental factors in medical record and behavior of a patient, escape from immaterial, focus the observation on the search for essential properties and dependencies in the disease of a patient, diagnose the actual state of a patient. At the **theoretical level**, a particular *synthetic* method of mental activity of a doctor is dominated - processing in the contemplation of views, and then the concepts that give medical theory a kind of integrity, thought concreteness. Theoretical knowledge gives the opportunity to dissect the nature and causal connection of certain phenomena in the human body. Only at this level of knowledge in the most concentrated kind appear all the distinctive features of the medical knowledge results in deep comprehension of the essence of disease and the life essence of the patient.

Today a health worker has no right to be a pure empiricist. "That is why now there is an acute problem of improving the theoretical training of physicians, developing his *philosophical culture of thinking*" [9]. Medicine will become not only a practical art of healing, but also the integration of theoretical science. The relationship of medicine and philosophy began with the appearance of the first signs of abstract thinking in medical business, and continues today. Medicine together with philosophy understands the complex world of a human's life, controlling his health. At the same time it becomes the object of special philosophical knowledge. Philosophical methodology of medicine (— and cognitive paradigm) is designed by performing heuristic, coordinating and integrating function to stimulate **the increment** of medical knowledge as a particularly sensitive way of integral knowledge about a person and his body. The activities of a surgeon is based on a critical understanding of philosophical and subject-conceptual spheres of doctor's activity, covering all the processes of course and cure of a disease.

In working with a patient, surgeon relies on the results of the preceding activity of other clinicians (therapists, neurologists, clinicians, etc.), who carried out diagnosis, treatment and prevention of the disease of this patient.

The fundamental strategic importance is **diagnosis**, which begins the actual work of a doctor, who uses methods of observation, assessment of detected symptoms, conclusions. Algorithm examination of a patient is determined by a deductive scheme of the diagnostic process, including inquiry, direct (clinical) examination of a patient, provisional diagnosis, additional methods of examination, clinical diagnosis.

The **stages** of the diagnostic process are:

- identification of *symptoms* is the primary information about a disease, but not yet defining its essence;
- combination of symptoms in *syndromes* –connection and unity of all phenomena is defined as a result of the essence of the pathological process;
- *the establishment of the nosological form of a disease* (higher stage of the diagnostic process) leading to the establishment of deeper relationships and causal dependencies between them.

"*The diagnostic process* is primarily a process of medical thinking, higher rationalization which can be achieved only by relying on the laws of logic" [10].

It is noticeable that the process of setting diagnostic, curative and preventive tasks is carried out under conditions of variability of the original data and time constraints when providing medical care for urgent reasons. Symptoms and syndromes help a doctor to simulate mentally the holistic clinical picture of a disease, to study and analyze the causes, conditions and mechanisms of its emergence and development. The price of the defects and errors of medical practice corresponds to its importance, sometimes it is defined as the highest value of health and human life [8]. In broad terms, we can distinguish the following ***cognitive tools of a doctor*** inherent to any cognitive entity:

- reflection as a fundamental means of knowledge;
- representation is ambivalent on the nature of the phenomenon of simultaneous representation-reflection of the object and its replacement-design (simulation);
- convention – a mandatory event communicative by nature, inter-subjective activity of cognition;
- interpretation – the moment of cognition and interpretation of meanings, and a way of being that exists by understanding [5, p. 42-43].

Surgeon uses different methods and forms of rational and irrational cognition (e.g., intuition, imagination, etc.), adequately revealing its potential as an activity of the learning subject, interested in the implementation of their cognitive abilities and skills. Using different cognitive technologies, surgeon becomes the subject of ***interpretative***, conducting operationally-methodological activity and his treatment of patient information.

Operating surgeon shows his **active** nature in his surgical work, acting in terms of problematic non-standard situations when "implementation" with a scalpel into the patient. There might "open" a completely different visual actual pattern than expected on medical records and the results of preliminary examination of a patient. This situation is given by the uniqueness of the body and the human personality and the openness of their systems. A surgeon has to cope with this new information "on the spot", "here", "now". However, the feature of an object of knowledge and a specificity of tasks that should be solved by a surgeon during surgery, places a number of requirements to his intellectual activity. One of them is the **holistic perception of the object**, and this must be often done **instantly!** Therefore, during surgery direct impression plays an important role, or, as expressed by M. M. Prishvin, **the impression of "first sight"**: "Small must get to know itself in a whole with all parts" [7]. You must develop the ability to perceive the whole through the detail. Through the details doctor needs to see the direction of disease development and possible solutions to surgical challenges, surgical help for a patient.

Of course, such a penetration into the essence of the surgical situation on the operating table and experience comes not at once. For an initial procedural stage of its practical operating activities young surgeon often manifests its irrational features as a subject, searches for solutions, trying different technologies. At the same time there is a risk of failure, blunders, mistakes, even death surgery. But in the course of extensive practice, **surgeon finds himself** in the forms of strict rationality with its maximum achievable certainty, the requirement of *objectivity* of thinking. The subjectivity in assessing the facts and diagnostic findings is the most common cause of medical errors associated with lack of critical attitude of a doctor to his philosophics. Subsequently many years of operational experience and competence formation allows surgeon to achieve the maximum level of readiness for the active innovative surgical operation, improve constantly his medical knowledge and medical skills, apply new technologies, methods of operation, and make new constructive decisions. And that **medical creativity** is a byproduct of medical practice; *it is the very essence of it!* A successful operation when you use the latest achievements of medical science is an **art**. It is safe to say that a doctor and especially a surgeon is not a profession, it is a **vocation**.

In general, being a surgeon is one of the most difficult specializations of medical practice in constant readiness to conduct operations (sometimes in extreme situations and conditions). Moreover, the systematic preventing of patients, maintaining accounting records, etc. complement the responsibilities falling on his shoulders.

System " surgeon — patient"

In the course of his professional work, surgeon is in contact with a patient's personality. In this interaction between doctor and patient there are many cognitive aspects that reflect the personality characteristics of these subjects.

Significant change in motivational sphere is peculiar for patient's personality expressed in the allocation of the leading motive and the installation - the preservation of life and health. With proper mindset and relationship, patient believes in the possibility and virtue of a doctor to cure him, hopes for recovery. The leading principle is *the principle of care and trust in a doctor* in fulfilling all his instructions, requirements, and assignments.

Surgeon's personality is characterized by the manifestation of individual psychological traits, properties, characteristics, and competencies. From this point of view, surgeon should be emotionally stable, physically healthy, firmly know his business. "Steel nerves", high stress tolerance, patience and thoroughness are just a few of the qualities that are essential to the specialist. On the reception of patients surgeon like any doctor must be sociable and polite as well as prompt and attentive from the point of view of professionalism, possess broad knowledge in different fields of medicine, and be aware of the necessary standard regulations in the field of health. Empathy, respect, interest, warmth and support are the key components of interpersonal skills of a surgeon.

In addition to cognitive aspects, there is a rich body of bioethical principles and mechanisms in collaboration of a surgeon and a patient in accordance with the strategic aim of modern medicine - a patient's well-being and health, which are subordinate to traditional classic goals - protecting health and life of a patient. The leading principle of biomedical ethics is the *principle of respect for the rights and dignity* of a man.

In its activity, surgeon as the subject of cognition has been *active* since he is interested in collaboration with a patient, without which his medical practice is simply impossible — no one to operate! The reason for a meeting of a doctor and a patient is a problem of the latter with health. Thus, a surgical patient cannot do without a doctor-surgeon, and surgeon — without a patient. Communication between a doctor and a patient can be called forced intercourse, as the main motive of meetings and conversations is the appearance of one of the participants in the interaction of health problems and doctor's "*forced*" *socializing* due to his profession. Activity of a surgeon as a professional depends on the results of this interaction. Thus , a surgeon, as a subject of medical practice, possessing the ability of self-awareness

and self-development, **replicates himself**, i.e. acts as a creative subject, improving his professional skills.

Additionally, in his active medical practice, a surgeon **transforms** the consciousness and inner world of a **patient** for recovery, as well as to provide information and humanitarian security of his medical practice. After all, the credibility of a doctor is at least 50 % of a treatment success. Therefore, patient as an object, is given to the surgeon, as a subject, in the forms of his activity. Taking into account the fact that a surgeon is constantly initiative and active, he "is a necessary pole of subject-object relations" [3, p. 156]. A surgeon as a subject **transforms himself** as well in relations with a patient.

But we should not forget that patient **comes with activity**. He responds to any action of a surgeon – constructive or not very effective. Patient will also react in two ways: either "he will fit" in the architectural-constructive project of a surgeon, or "interact with a gap in harmony with him - like with "an extraneous body ", "an enemy", making an attempt on his health, freedom, inner peace. And in this sense patient is (becomes) also the *subject*, influencing interpersonal process (forces surgeon with flexible thinking and a well-developed empathy use appropriate psychological techniques and methods of communication), as well as his own process of self-discovery in preparation for surgery and postoperative period.

In different historical times there were the following models of **medical ethics** in the relationship of doctor and patient:

- *Model of Hippocrates* (5-4 centuries BC) - "do no harm", thus, doctor wins social trust of patient.
- *Model of Paracelsus* (the middle ages) - "do good" – there is an emotional and spiritual contact between doctor and patient (paternalism), kindness of a doctor, on the basis of which the entire treatment process is built.
- *Deontological model* (modern) - the principle of "confidentiality", based on strictly binding moral prescriptions of the medical community and society, as well as the will and mind of doctor.
- "*Honor Code*" - for each medical specialty; non-compliance is fraught with disciplinary action.
- *Oath of the Russian doctor* (1994) and the Code of medical ethics of the Russian Federation (1997) — for Russian doctors.

The following four synthetic *models of the relationship between a doctor and a patient* have been currently developed in the modern world [10]:

- 1) *Model of "technical" type* — a physician-scientist should "be impartial", rely on facts, avoid value judgments.
- 2) *Model of sacral type* – a paternalistic model "does not do harm", similar to relations between a parent and a child; refusal of morality by a patient, because he loses the ability to make decisions, he shifts them to a doctor.
- 3) *Model of a collegial type* - doctor and patient should treat each other as colleagues striving for a common goal - to eliminate diseases and keep the health of a patient.
- 4) *Model of a contract type* - a contract or an agreement between doctor and patient is the most consistent with real-life environment.

Doctor needs to take into account *patient's behavior pattern* towards him. There are kinds of different and even opposite relationships of patients to doctors like indifference, distrust, conflict, approval, admiration and even love. Doctor responds differently to these emotional forms of interpersonal contact. But in any case he must display moderation, interest in creating and establishing psychological comfort in interaction to enhance the motivational orientation of a patient to optimism, recovery, favorable outcome of disease treatment. "The most popular medication is the doctor himself. And if to you see it with the eyes of a patient, the identity of a doctor is the most powerful placebo" [1]. We should strive to release patient's negative feelings and develop positive emotions that can serve as a psychotherapeutic agent recovery and give unpredictable results recovery — for prompt, proper and adequate complex treatment.

Despite the diversity of approaches cooperation of surgeon and patient consists of four key components of the doctor 's behavior within his medical practice: support, understanding, respect, sympathy.

Medicine, as a branch of human activity, occupies a very special place because the science in it is *combined with such values* and approach that have nothing to do with science. **Compassion** as the basis of the medical approach is a human approach, outside of which medicine does not exist! However, compassion does not mean sentimentality. It is a *creative responsiveness to the suffering of a patient and his situation*. The response is creative enough to encourage a doctor to take action, with respect to a specific person and his significance [6].

System "surgeon - surgeon"

Surgeon works in a team of a certain medical institution. Therefore, for successful work it is important to consider all the nuances of interacting with colleagues. In this regard, there is a distinction between individual and collective (group) medical (medical) entities.

Surgeon as an individual medical subject is an individual, ontical subject, individual surgeon, a specialist with individual natural-social characteristics, the activity of which is aimed at a patient as a medical subject. Cognitive functions of a competent personality of a surgeon reveals his perceptions of the world in terms of introduction of medical innovations in surgery, certain adaptation mechanisms, activation and regulation of the private medical educational activities.

The integration of all cognitive functions of a surgeon as an individual entity allows deploying innovative surgical activities in more extended scale. *Surgeon as a collective (group) subject* has the same functions of an individual subject, but of a larger scale and public nature, i.e. it is a carrier of specific code of practices, knowledge and collective consciousness. Medical staff of any medical institution (clinic, hospital, dispensary, medical institution/University, community/Association of surgeons, etc.) can be considered as a collective medical subject.

In relations between colleagues, there are following ***ways of behavior and interaction*** a) cooperation, collaboration; b) competition, rivalry. At the *micro level* (within a team of a specific medical institutions) and *macro level* (within the community of surgeons of the city, region or country) creative possibilities of each surgeon are revealed. ***Forms of communication and interaction*** between professionals are in form of meetings, consultations, presentations, extensive joint surgery, scientific and practical conferences, forums, congresses of surgeons of related specializations, etc.

In addition to the interaction of a surgeon with other surgeons, he contacts directly with physicians of other specialties (anesthesiology, resuscitation) and paramedical staff (nurses — operating, procedural, ward).

Doctor and nurse become a dominant couple, affecting other multidisciplinary interaction and in particular on the nature of the relationship with patients. Surgeon performs the role of diagnostician and prescribes treatment and nurses become performers, distributors of medication, etc. The relationship of physicians with fellow nurses is based on common sense, understanding, professional respect, tact, responsiveness, friendly cooperation. Surgeon realizes that a nurse performs the role of a real physician's assistant, his assistant and partner.

System of "surgeon — society"

Surgeon as a subject acts in society. He interacts with others by means of various socio-communicative and other relations of a different nature such as spatial, psychological, interpersonal, professional, group, national, universal, etc. It is considered that a "real" doctor is a benchmark for wide public not only in matters of health protection (for example, he must not smoke, drink alcoholic beverages, has to lead an active lifestyle, eat well), but also morality. There is an opinion that a doctor should be fully committed to medicine, compassionate, self-rigorous, moderate in his demands, sensible with assessments and able to develop strength of spirit and determination in difficult situations.

System of "surgeon — self"

Here a cognitive model of a surgeon is based on the synergy of anthropological and methodological characteristics of the flexible rationality, i.e. the peculiarities of his temperament, character, memory, perception, attention, imagination, will, abilities, etc.

Under normal conditions, the **temperament** is manifested only in the peculiarities of an individual style, without defining the performance of a surgeon. In extreme situations (surgery, complex cases, accidents, deaths, conflicts with patients, colleagues, administration, etc.) the influence of temperament on the efficiency of enhanced, learned behaviors becomes ineffective, requires additional energy to mobilize the body. Knowing your temperament, surgeon must rely on positive qualities and overcome negative ones.

Temperament serves as a common foundation of many other personality traits, especially **character**. Temperament does not determine the path of development of specific features of character, temperament itself is transformed under the influence of character qualities. The development of character and temperament in this sense is interdependent. The interweaving of various features of character and temperament largely determines surgeon's individuality, his personality, his charisma. Surgeon should be strong and courageous. Strength of character must be used for the benefit of a patient. Amenity of temper and a sense of compassion, inherent in every intellectual demands from a surgeon to have his boundaries. He must show ruthlessness when necessary for the benefit of a patient and it is impossible to do without it.

For successful operations special voltage of psyche is needed- **will**, power, control over actions, behavior and moods. Will, restraint and self-control in dramatic conflict or unforeseen extreme situations

on the operating table require the mobilization of all mental reserves in order to suppress involuntarily arising situations like feelings of fear, confusion and hopelessness.

Another quality that surgeon must possess is a **flexible intelligence**, an ability to make quick, sometimes instant decisions and implement them rapidly. Slow-wittedness and slowness of a surgeon goes bad for a patient. At the same time, an ability to transform thoughts into solutions and solutions into actions has saved a lot of lives. Therefore, surgeon needs to treat each decision with a sense of responsibility, remembering that failure to comply with the decision relaxes the will. The thought of a surgeon is a marching orders. Words actually affect the body.

Most doctors' labor is characterized by a significant intellectual burden, in some cases, accompanied by large physical efforts, and always places high demands on operational and **long-term memory, attention, stamina**, long-term preservation of health and complex of personal qualities of a doctor, allowing him to work in contact with sick people during the whole professional experience, while maintaining the required level of professionalism and compassion.

Doctor, especially a surgeon, is constantly in a state of chronic **stress**. It should be removed. Throughout activity of a surgeon such things as profession pride, boundless faith in it, faith in its humanity and usefulness to society, surgical creativity help the doctor especially in difficult periods. It perfectly demonstrates the unity of the empirical and the rational, since will is certainly made up of two different elements –art of handwork (tactile dexterity, dexterity) and scientific thinking. One without the other will prove fruitless. It requires *clarity and speed* of a violinist's and a pianist's fingers, *accuracy of a good eye* and *alertness of a hunter*, *an ability to distinguish the slightest nuances of color and shades*, like the best artists do, *a sense of form and harmony of the body*, as the best sculptors possess, *care of lace makers and embroiderers of silk and beads*, *the skill of cutting inherent to experienced cutters and model shoemakers*, and most importantly –*an ability to sew and tie knots with two or three fingers blindly*, at great depth, i.e. showing features of professional magicians and jugglers. Many surgical operations are as precise as carpentry and locksmith services with the use of thin mechanical techniques. Operations are sometimes similar to artistic appliques or mother-of-pearl and precious woods inlays and eye surgery, in particular, requires jewelry work. So, the extraordinary complexity of the abdominal topography and pathology requires from an abdominal surgeon not only properties, knowledge and ingenuity of architects and engineers, the courage and determination of the generals, the sense of responsibility of lawyers and statesmen, but also high technical skill orientation, excellent techniques of sewing and cutting and true art in solving puzzles , presented with many cases of close-loop obstructions and volvuli [See: 2]. Overall, a perfect surgeon must have the following qualities: accuracy – imagination – the talent of the Creator – scientific curiosity – patience – humor — luck.

Conclusions

Cognitive modeling of performance and conduct of the surgeon is based on the understanding of the status of the surgeon as the activity of the cognizing subject. His social and natural qualities are manifested in a certain perspective that a physician regulates, directs, and corrects, in accordance with the requirements of medical practice. Determining factors and source activity is the surgeon's compassion, commitment and activity, revealing his nature and essence as a professional.

In general, operating surgeon is characterized by rational *epistemological* properties (as the creator of the models to their surgical operations) and *empirical* (ontical, irrational) of the cognitive qualities that are combined to create the *integrity* of the surgeon as to the perceptive activity of the subject in all its guises and manifestations. The combination of *rational and irrational* in each surgeon contributes to the diversity of interpretations, decisions, projects operating on patients, and determines the charisma of a doctor and the complexity of his behavior as a specialist-professional.

Modern practicing surgeon understands the ethical standards of professional patient research, quality improvement of his health and essence. The *mentality* of a modern doctor includes philosophical, moral and ethical qualities, the ideas of true humanism, the desire to possess aggressively psychological and philosophical knowledge, professional skills within the framework of deontology as a science of care duty.

Surgeon as the subject of cognition is the generator of all these interweaving and transformations thanks to the constant activity of his consciousness and self-awareness. As Nietzsche said, "the light is inside me."

Bibliography

1. Boluchevsky V. V., Pavliukova A. I., Sergeeva N. In. Physician communication: features of professional interaction. http://www.medpsy.ru/mprj/archiv_global/2011_3_8/nomer/nomer22.php
2. Sources and psychology of creation surgeon http://www.uhlib.ru/medicina/razмышlenija_hirurgap2.php
3. Lecturing V. A. Epistemology classical and nonclassical. – M., 2001. -

4. S. I. Masalova Philosophical concepts as regularities flexible rationality: transformation from antiquity to modern times. Monograph. - Rostov n/D, 2006. -
5. Mikeshin L. A. Philosophy of knowledge. Polemical Chapter. – M.: Progress-Tradition, 2002. -
6. About modern medical ethics. Metropolitan Anthony Of Sourozh. – SPb.: The revival, 2009. -
7. Prishvin, M. M. Power related attention: from the diaries. / M. M. Prishvin. <http://www.dissercat.com/content/priroda-v-dnevnikakh-mm-prishvina#ixzz3ZAjJ2lv9>
8. The specificity of professional activity of medical worker, his professionally important qualities http://med-books.info/akmeologiya_770/spetsifika-professionalnoy-deyatelnosti.html
9. <http://m-kat.ru/info.php?id=1>
10. <http://bibliofond.ru/view.aspx?id=459196>

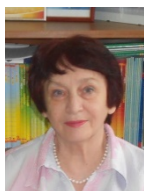
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