

The Transformation of Ideas about Ethical-Humanistic Dimensions of Science in the Context of Eastern and Western Philosophy

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Abstract - The article is devoted to the analysis of ethical parameters of science in the context of the philosophy of East and West. It is shown the evolution of ideas about the ethical norms of science in the philosophies of Central Asia scientists such as al-Farabi, Abu Rayhan Beruni and Ibn Sina. The problem of morality and cognition is perennial. History of science development (the development of the atomic and hydrogen bombs, modern genetic engineering, the environmental situation, cloning and ICT, etc.) confirms its relevance at all stages of human civilization development. Ethical spheres of science were developed in the proceedings of philosophers of the West: Gassendi, Boyle, Descartes and Merton. A new type of rationality, which is now approved by the post-non-classical science, resonates with ancient Eastern concepts about the relationship of truth and morality. In the strategies with complex man-sized systems as benchmarks are not only knowledge but also moral principles, imposing bans on dangerous for human beings ways of experimenting with the system and its transformation.

Keywords - Science, Ethics, Standards, Scientific Knowledge, Man-Sized Systems, Scientific Ethos, Humanism, Values, Truth, Cognition, Culture, Digital Ethics.

I. INTRODUCTION

The humanization of science in the 21st century acquires important methodological significance in the process of integration of various branches of knowledge around the comprehensive study of nature and man, his spirituality, in the search for the meaning of the historical process, its human conditionality. The digital information society recognizes the need for “reverence for any life” as a principle of respect not only for the rights of every person, but also for the right to life of all nature in the broadest sense of the word. The humanistic transformation of science, the scientific community directs its gaze to the noospheric consciousness, a holistic vision of reality [1], to

deepen and expand the relationship of knowledge and ethical standards in all spheres of human activity.

For many years, science has mainly satisfied innate human curiosity. A retrospective analysis shows that in the 19th century, scientific results began to be applied in industry, the 20th century attracted science to politics, and in recent decades, scientific innovations have transformed everyday life. Personal computers, information and digital technologies, the complexity of telecommunications systems, gadgets, email, the Internet - in the recent past, all this belonged to the realm of fantasy.

Scientific achievements make a huge contribution to the socio-economic development and welfare of mankind, they

affect relations with the environment and the quality of life. But the development of science also creates new problems that require careful consideration and reflection. Penetrating the secrets of the cosmos, nature and the human body (quantum cosmology, cognitive psychology, genetic engineering, cloning, transplantation of human organs, nanoscience, digital technology, etc.) scientific knowledge gives rise to acute philosophical and methodological, worldview, moral and humanistic problems. These problems affected the personal and social aspects of human being. This served as the basis for a deep understanding of the humanization of science, the recognition of the inclusion of the ethical coordinate in scientific activity, which implies its correlation with the interests of man, an assessment from the point of view of these interests of the possible results of the practical use of the knowledge gained, and the existence of a developed sense of ethical responsibility before society for the fate of civilization.

Questions of the socio-ethical foundations of human life, the humanization of science attracted the attention of Eastern and Western thinkers. Well-known thinkers of Central Asia (al-Khorezmi, al-Farabi, Beruni, Ibn Sina, A. Navoi) and philosophers of Western Europe developed a harmonious concept of the moral and humanistic norms of the development of science. They believed that such an approach is an integral part of the development of science, although it must be recognized that these issues did not arise before mankind in such an acute quality of its immediate being.

II. METHODOLOGY

The methodology of this article consists in the approaches of the problem-chronological, comparative-analytical and retrospective-historical methods. The study was carried out in accordance with the basic function of epistemological, ethical, humanistic scientific research.

III. MAIN PART

A. *Al-Farabi on Correlation of Cognition and Morals*

In all of history and epochs the concepts and, theories of sciences must be humanly measurable, and ethically adjustable, and correlated toward humanistic values common to all humankind. Culture and humanism are significant and fundamental science comprising to form the philosophical and ethical components necessary for the maintaining of goodness for mankind. These parameters of science had been formed in ancient times. The correlation of morals and cognition in the system of human activities has always interested Eastern and Western scholars. The

solution to reaching and maintaining this problem balance of cognition and morals is found in works of Central Asian Medieval thinkers. One of the peculiar characteristics of this period was that of human morality, a core issue of scholarly research. Thus, the thinkers of Central Asia were deeply convicted that science and scientific knowledge foster the development of best moral attributes of scientists which in end result give rise to spiritual perfection and lead to the development of a sphere of components including intellect, mind, consciousness, thinking, state of mind, morality, will, and others.

At present science actively penetrates into mystery of space, nature and the human organism. Through techniques and latest technologies it invades into all spheres of social being. All these raise acute social - philosophical and methodological, ideological and ethical questions, some of which appear invariable. These are, for example, the correlation of wit and morals, attitude to man, ethical values of a scholar and so on. Each scientific community in the period of its activity forms humanistic principles and certain moral standards the by which scholars of that epoch are guided.

The problem of correlation between knowledge and morality was set in the philosophical concept proposed in the social and ethical treatise, Al-Farabi. The issues of morality, Farabi Conclude, closely correlated with intellectual characteristics of man, with his wittiness, and therefore the ethical categories, which be considered to embody not only certain norms and regulations of moral relationship, and to a certain extent the results of reasonable activities of people throughout the whole history of their existence. In his boo: «Directing the way to happiness» Farabi wrote: «Good nature and power of mind, both taken together, imply a human dignity in the sense that virtue of everything is in superiority and perfection in it alone and in its actions» [2]. Reasonable activity is regarded by Farabi as a natural attribute of man, ethical norms and regulations are establishes by societies, he deducted, from the experience of everyday social life of each man. Accordingly, the ethical categories arise from concrete relations among concrete people. These concrete establishments do, however, change and develop.

An indispensable condition to reaching happiness, as Farabi claims, is the studying of sciences and obtaining theoretical and practical knowledge [3]. The person who starts studying theoretical knowledge, first should make ready himself and then to clear his personality from natural passions so that only their passion for truth is left but not

their passion for enjoyment; and, in addition, to the passion for truth sharpening the power of speaking from one's soul is essential in order that truth will become the absolute desire. The ability to be moral, according to Farabi, inconceivable without the exercise of the intellect. Following this, he claims that organic combination of mind, erudition, scientific maturity and high moral attributes are essentials of this process. The person who starts to learn sciences should be young and modest, possess good health, be virtuous and good-mannered, guided by principle, dissimilar from cunning and deceiving and avoid ill deeds and have reverence for and respect toward learned people. Farabi states that "knowledge should be ornamented with good behavior." The entire activity of the process the life and death cycles, kills, customs, knowledge and aspirations of a man are summarized by morals, similar to that of the fruit crowning (everything that is going on) inside the tree [4]. Approaching of social perfection is accomplished in the process of introducing high intellectual and moral standards everywhere, standards up-brought with application of the advantages of science. Intellectual advantages, according to Farabi, are inseparable from ethical ones: intellectual means kind heartedness and of high morals. To achieve perfection the fullest sincerity to oneself is needed, especially when regarding one's awareness of the best possessions that one has. An individual attains perfection in the environmental conditions of a perfect society through learning sciences. The attainment of perfection requires persistent intellectual efforts and scientific and philosophical comprehension of the world. People should as far as possible attain virtuous ways of living in their communities and build up Virtuous cities founded on the principles of Intellect, Goodness and Justice. Farabi makes high demands on the personality of scholars: "A philosopher should at first obtain knowledge, then discuss it with specialists and then put it into practice, otherwise this knowledge could remain imperfect» [5]. Furthermore this idea is elaborated upon: "He who has taken up the path of science, should be a modest, learned person, a good orator and should avoid evil..., he should esteem people of science and science itself should be for him the priority over all earthly blessings» [5]. As for describing the characteristics of a genuinely intellectual man, Farabi includes ethical categories, sincerity, honesty, and pursuing a pure moral way of life. He was aware that these categories represent significant value-and-ethical standards in scientific knowledge development. Thus, Farabi claims that a person lacking high morals and virtues cannot be marked for success in science. According to Farabi, "knowledge and good customs, knowledge and up-bringing are intertwined" [6].

Farabi differentiates between a reasonable person and a moral one characterizing them by attributes inherent in them. A moral person has twelve inborn characteristics. Farabi believes that deep insight into philosophy is possible providing concord of intellect and high morals. He wrote: "he, who tends to start learning (sciences), should have in nature predisposition to theoretical knowledge. A person should possess an excellent understanding and notion of the main point of matters, he should be staunch and reserved in the process of gaining (knowledge), he should according to his nature love truth and its adherents, justice and its adepts, he should not to reveal willfulness and selfishness (egoism) in his desires, not to be greedy... He should ... be well bred, easily obey goodness and justice and struggle to give way to evil and unfairness, possess of great prudence... If all these attributes are in possession of a young man who has already commenced to learning (philosophy) and has learned it, then, perhaps he will not become a false, not real and groundless philosopher" [2]. A false philosopher is a philosopher who does not perform virtuous deeds, but on the contrary, always indulges in their own desires and temptations.

B. Abu Raikhon Beruni on Ethics of a Scholar

High standards of the development of science and philosophy in Medieval Central Asia can be explained not only by high levels of applicable abstractions for each historical age but also by ethical relations among scholars. Paying great attention to logical and methodological issues they did not extend outside the field of their interests of moral problems, respectful attitude to colleagues, and reverence for cultural heritage in light of the importance of the succession in the promotion of science. In this respect of great interest is the correspondence (letters) between Ibn Sino and Beruni, representing a prime example of scientific and moral relations between scholars both to each other as well as to the learned of previous epochs. Thus, Beruni emphasized that the scholar should clear his soul from (bad) attributes which spoil most people and from reasons making a person blind to the truth, i.e. from ingrained habits, liking rivalry, obeying temptations and fighting for power...The method described above is the best path to follow in order to reach truth, a powerful method of removing doubt and uncertainty which darken the truth. The scholar defines the particular parameters of each problem, standards for interrelationships in the process of cognition among the succeeding generations, "a reader is bound to be (either) similar to me and in this case he will praise me and give thanks for my zeal, or his level (of knowledge) will be higher than mine and then he will be merciful having

coordinated the problems and will forgive for mistakes possibly happened» [7]. This idea has been further developed through science innovation. At the present period, the definite ethos of science has been formulated, and a scholar should obey the directives and standards of modern science.

Beruni held that a person, as to their nature, tends to a strong desire to cognize everything that is hidden from his eyes due to these or those objectives and subjective factors. While striving to cognize that which is unknown it is a naturally inherent characteristic of man to display praise-worthy attributes, so a scholar considers it as an ethical principle of fairness and virtue, and every resistance to gaining knowledge he regards as evil and unfairness. "Similar to that fairness by its nature gives rise to approval, by its essence wins the love of others, attracts others by its beauty, and the same is true for truth" [8]. A significant stimulus and key factor of the progressive development of science, according to Beruni, is people's paying attention to and dealing with numerous spheres of knowledge, sincere respect and honor paid to sciences and their representatives. Taking care to multiply knowledge is the direct duty for those who govern people, as it is their duty to release scholars' hearts from worries and provide them with all they needed in earthly life. Only then, it is possible to stimulate the spirit to winning as much as possible the praise and approval of others, because hearts are created for love of truth and the hatred of lies.

C. Ibn Sino on Knowledge and Humanism

Its conceptual expression is the idea of correlation (interdependence) between knowledge and humanism that is found in Ibn Sino's works. The thought of the unity of the human's mind, combining high moral and humanistic qualities, has found its bright reflection in this concept and is represented as a clearly defined ethical and gnosiological phenomenon. Thus, wisdom, according to Ibn Sino, is not only the basis and resource of gaining human knowledge but also the moral interrelationship among people; for man is endowed with such power by which he can differ well from evil, intellectual maturity and perfection from delusion and lie [9]. Being reasonable creature, man occupies a special place in nature. Due to his intellect, he becomes a personality free from pressing influence of fortuitous and spontaneous (uncontrolled) forces of nature and the bending toward requirements of the "wisdom scales" practical and theoretical activities [11].

And as Ibn Sino wrote: "In our wishing to be of benefit to another man we want to acquire a good reputation or

hope for recompense, or we behave and act to conform to the rules in order to reveal good will and perform our duty, as performance of a duty for us in a moral merit, honor and virtue. If we do not act so we will acquire neither these laudable attributes, nor virtue, nor nobility" [8]. Interrelations among people are formed in large part on the basis of virtue, and nobleness. Ibn Sino stated that mind "can see that from where spring out goodness, order and happiness".

Thirst for knowledge, and the everlasting striving for attainment of a goal are correlated with the power of the mind and wisdom [12]. In this regard a person is represented not only as possessing a good-looking appearance and high morals but he is further a creator of high moral virtues. The human, due to the power of their mind and their thinking not only defines the boundaries between truth and lies, but also has a real possibility to differentiate between friends and enemies. If for comprehension of the nature of things it is necessary to have intellectual maturity and erudition, but in the case of moral perfection these are not enough. Dialectical unity of knowledge and purity of moral intentions make the man wise and noble. Furthermore, this follows ideas similar to that of the comprehension of essence and reason of phenomena of the outer world as a major basis for further shaping of moral virtues, in the same way that moral perfection opens unlimited opportunities and horizons for profound analysis of reality, objective research of scientific problems, release from vices and intended enmity, prejudice disrespectful attitude to opinions and judgments of their ideological opponents. When a person has entirely gotten rid of their moral vices and bad habits humiliating him as a personality, he "without extra odd difficulties and burdens studies and becomes useful and pleasant for others" [10]. Thus, the conception elaborated by Ibn Sino came to acknowledge, ways of understanding the points of matter and of the nature of things not being ends in themselves. The significance of knowledge and science is defined first of all by its place and role in moral perfection of a personality and a society on the whole. As well, the value of knowledge, according to Central Asian thinkers, is defined in that it either serves goodness or favors the blossom of evil and degradation. Indeed, the science should serve goodness. It is especially important at present. The solving of scientific and technological problems should implicitly include humanistic ideals, for otherwise it alone would lead to negative consequences threatening man's health and the health of nature, i.e. to the entire planet.

In philosophical thought in Central Asia the central place was intended for knowledge. This view of science in the Muslim world achieved a great success and contributed to the history of mankind. Knowledge as a core strengthens civilization. On the whole, knowledge is considered to be above action. "Knowledge, - al Gazali claims, - is "the root of roots", because action obtains its shape only through understanding how this action could be performed" [13]. Al-Khorezmi held that only cognizing the mysteries of nature and realizing the truth makes it possible to solve practical tasks. Any action could not be done without knowledge. Knowledge and action are dialectically inter-correlated, "if it were not an action, people would not have striven to knowledge, and if it were not for knowledge, people would not have striven to action" [13].

D. Sufism on Moral Dimensions of Science

The thinker of that period saw discrepancy between human activities and human morals and made attempts to resolve conflicts between actions and ideals. Thus, A. Navoi who saw the power of the mind and the vices of immorality [14], believed that moral attributes of humans are above all and they define his activity in the community and his interrelations with other people. Striving of a prominent humanist to morality, understanding its importance in the evolution of a society, made him pay attention to Sufism as within it there are concepts created which lead to the moral purification of a man, and ways to attain high morals [15]. Sufism leaves a man alone with their conscience, makes him think of himself self-perfecting, and up-brings them in the spirit of justice and moral purity. The problem of morality and cognition is everlasting. The history of science development, if mentioned in contexts such as the creation of atomic and hydrogen bombs, modern genetic engineering, and ecological situation, for example testify to its topicality at all stages of human civilization development. It is implied that Sufism not only drew attention to this problem but also elaborated its own conceptual structure. The stages of cognition are correlated with stages of comprehension of Truth: Sharia (code of Muslim's law and morals and morality), Tarikat (Sufi's way and method to comprehend truth), Ma'rifat (religious education and enlightenment) and Khakikat (truth). As far as a Sufi achieved the Truth he more and more approaches both mentally and morally such a state when he begins to feel the ability of prediction (karomat) and when divine, extraordinary and supernatural phenomena are revealed to him. It is at this stage that man is unable to cognize the divine world by means of reason. Here he needs intuition being the attribute of selected persons (orifs) who obtained

the ability of prediction (karomat). Sufi ideas have opened great opportunities for human thinking, for freedom, the scope of man's thought and self-consciousness of man. At the same time, the problems of world cognition are set and they are not restricted by mentality alone but represented by a sophisticated system with intuition as a supreme element. We should not follow that objective existing world is confined only to the world of material empirical reality. The essence of Sufism "having occupied its place in people's hearts is expressed in ideals of Honesty, Truth, Beauty, Perfection and ideas of Humanism which gave inspiration to great scholars, writers and men of letters" [15]. Sufism, as philosophical and religious teachings, offers concepts exerting great influence upon further advancement of culture and spirituality not only in Central Asia but also in many other countries. Knowledge is a necessary component of personality, which comprises the striving to perfection through learning and getting education. Gaining knowledge is identified exclusively with the category of happiness and it leads to attainment of the highest moral perfection and dignity. Any improvement (promotion) in social status for man depends on volume of his knowledge and shall not depend on wealth, preference of birth, social status and so on. In his social environment neither morals, nor well-being, nor action, nor any other social value attracts the same attention as "knowledge." In this concept knowledge is correlated with personality, with inner feelings and the spiritual world of man. Cognitive and practical activity of man is based on rationality. Reason and rationality are not only tools of knowledge but also the means of social practice. In the basis of every activity there laid knowledge with a priority part assigned. In the East knowledge is a motivation to action, individualizing the subject. Interest in scientific and civic knowledge, the leading role of reason in intellectual and educative as well as religious and ethical activities, socio-political and cultural environment on the whole have determined the advancement of science in the East from the 9th -15th centuries.

E. Ethical Guiding Lines of Science in Modern History (New Times)

The abovementioned issues were developed in works of the succeeding generations of philosophers in the West. For revealing humanistic dimensions of scientific knowledge, not always "lying" on the surface, special analysis is needed. Most distinctly these dimensions are revealed in the period of radical changing philosophical and methodological directives, in the course of scientific revolutions; least distinctly they are revealed during the

period of "normal" science. The scientific revolution in the 17th century in this respect represents a beneficial object of investigation. In this epoch of forming new cognitive directives and new research programs the correlation of scientific knowledge (cognition) with common humanistic and ethical aims of man was under direct discussion pursued by founders of science of the new times.

For example, Decart in his letter to a French translator of his "Principles of Philosophy" specially emphasized the ethic-and-humanistic value of physical ideas developed in his "Principles", noting that "the prior object of our regard should be a proper way of life...", to what extent these principles are important for us when searching for the truth and to what heights of wisdom, perfections of life, and states of bliss all these principles may bring us" [16]. The advocates of atomism (Gassendy, Boyle, Newton) offered as the evidence of its advantages, first of all, the arguments proving its values. According to Boyle, it is inadmissible, acting in a manner similar to the followers of Aristotle (Aristotleists), to put the anthropoid capacities down to the matter since it makes a man - a unique creature - partially free of burden of responsibility for himself and for nature. So then, what moral and humanist ideals of European culture existed in the 16th —17th centuries? The greater interest was attached to philosophical doctrines of the late antiquity period referring to analysis of human subjectivity. The increased interest to philosophy of the late antiquity, as we see it, lies in deep social changes of that epoch. Demolition of the standardized norms of political, economical, ethical and other manners set before men of the 16th -17th centuries caused an acute problem to attain the maximum perfection of self-consciousness, formation of individualized inner spiritual points of rest. The idea of formation by humans of morals purified in the flame of ordeals which could allow people to parry any blows of destiny, the idea of steadfastness and inviolability of consciousness, his insolubility under any outer circumstances - all these ideas became extremely popular in a considered period. The philosophers of the late antiquity period appealed for changing self-consciousness, self-control, for the elimination of any elements of fortuity and spontaneity from life, consciousness and manners by men.

Let's, in light of all abovementioned, analyze Decart's "code of morality", which was considered by him as an aspect of his method. There are three principles in the "code of morality" allowing man to "become as happy as possible", with maximum devotion to the cognition of nature. They are as follows: 1) to abide by the laws and customs of the country as well as opinions of the most

moderate people; 2) to stay firm and strong as far as possible in activities which are in conformity with the opinion once taken by him; 3) to strive to win the victory mostly over himself but not over destiny and to change one's own desires but not the existing order of the world. In this fragment Decart develops the thoughts, which are even textually closer to ideas of stoics and epicureans. Just to illustrate this point it is important to cite a passage from Epictet. The moral "Code" of Epictet includes the following statement: "Mind is the only and the most reliable criterion of morality; the outer world has been strictly determined by the gods' decree, everything in it happens by perforce; but the inner world is in the hands of men; a truly wise man is free as he doesn't confuse the things depending on and not depending on him...; purpose, and the meaning of life is for the understanding and the gaining of inner independence; the true way of the path is in resignation and obedience to the will of the gods, moderation in requirements, and impassiveness, cold reasonableness" [17].

Decart does not cut the method of nature cognition off from the method of proper (virtuous) way of life"... I could scarcely limit my desires or gain any content if I wasn't following a way leading me to all attainable knowledge I was gifted for; just in the same way I proposed to attain the knowledge and all true benefits accessible for me" [16]. For him, the attaining of the absolutely determined course of natural processes becomes the important means for ridding himself of all stupid, idle thoughts and useless desires; the cruel laws of nature work as a tutor "upbringing" such virtues as restrain, courage, consistency (logic), and responsibility.

All knowledge must be helpful and useful for answering general questions about human existence, nobody needs any abstract knowledge if it does not help to construct meaningful and adequate lives, - and this is a basic idea of the trends in the late antiquity period. This tendency turned out to be extremely harmonious to the men of the epoch of transition (15th -17th centuries). For the humanists of the Renaissance, personalities of Reformation and thinkers of the 17th century the problems of morality became central. Each field of knowledge that was not perceived to correspond to this basic tendency was treated as a needless and lifeless burden. For a man of that epoch there was no uncertainty about the fact that all the principles of physical (physics) as well as human (ethics, laws) nature were governed by the common natural laws, which had been given to the world by its one and only Creator. Physics and ethics (considered as "science of life") should exist in full harmony of each other's at the top of the tree of knowledge

Bacon gives ethics and civil science, and Decart - only ethics. He places the following note under the ethics: " I mean the highest and most perfect science of manners; it presupposes the complete knowledge of other sciences and so, may be considered as the last stage in the way up to the highest level of wisdom"[16]. Thus, the general moral intuitions concentrating their knowledge on physics had become the most important science for man - ethics. As to the founders of the science of the new times, the cognition of nature is applied like as the most important means of moral existence. For example, for Decart the development of analytic geometry, mechanics, and optics was not used just for getting results but also as the form of development of self-creation, self-realization, and the way of true moral, meaningful and reasonable existence. In this process there coincided the self-development with the improvement of available scientific knowledge. The scientific research, in context of culture that existed in that time became the most available means for revealing indissoluble links existing between human, moral principles of men and the content of knowledge about the world. Correlation of moral-and-human ideals and norms with the ideals and norms of scientific analysis, as we see them, was explicated in the works of the thinkers themselves.

Leibnits wrote that "the scientists ...seldom create anything outstanding and original but not because they are short of talents but because they are constrained to the limitations of dogmas of sects... he who has got into the habit of following only one author becomes a slave of his master, as if by the right of long standing, and can hardly direct his mind towards something new and original though it is known that there is no other way allowing for expansion as to multiply knowledge but only the diversification of methods followed by different scientists in their search for ultimate truth" [18]. These ideas take their systematic explication in the normative ethos of science by R. Merton. The aim of these directives was to convey a value-and-normative complex, which determined the manners of a man of science at attaining moment of the true knowledge.

The nature of "scientific ethos" was described for the first time by Merton in his conceptions. The analysis makes it evident that these ideas have been already claimed by the scholars of Central Asia in their time and respective scientist. In modern interpretation of the institutional imperatives there were added various supplements: norms of originality, intellectual modesty, independence, emotional neutrality and impartiality.

F. Moral Norms of Post Non-Classical Science

How is this problem being settled in modern science? Modern science and technological activities more and more frequently deal with complex self-developing systems. These systems' mastering puts forward not only methodological but also philosophical, moral-and-human problems. The strategy for dealing with self-developing systems results in cultural exchange between the western technogenic civilization and ancient oriental cultures. It is very important since the dialogue between the cultures emerged as a factor for elaboration of new values and new strategies for the development of civilization.

For centuries science has developed in accordance with a new European cultural tradition, which is why it was coordinated just with the western system of values. Now it becomes clear that the modern trends in scientific development may also be coordinated with philosophical ideas of the oriental cultures considered as alternatives to the western values. Here should be emphasized the following moments: 1) the oriental cultures always proceeded from the fact that the natural world in which man lives is the living matter but not a kind of faceless inorganic field. The development of modern ideas in bio-sphere being considered as a global ecosystem proved that the environment closely around us is really a balanced organism involving a man as part of its life. 2) The objects, which represent the systems developed in human proportions, and require the elaboration of special activity strategies. The directive on the active forcible reorganization of the objects is not considered as an effective one in such systems. In position of instability, in the points of bifurcation, sometimes it is enough just to prick it slightly at a definite point focusing any place and time to provoke a generation of new structures and levels of organization. Such ways of affecting change reminds one of a strategy of non-violence elaborated in line with the Indian cultural traditions as well as the activities taken in accordance with the principle of "u-way" proclaiming an ideal based on minimum activity with feeling a resonance between the rhythms of the world. 3) In the strategies for operating with complex humanized systems there have emerged a new type of integration between the truth and morality, rational purposeful activity and rational value-oriented activity [19]. The scientific cognition with such systems stipulates a control over the whole range of possible trajectories of the system's development at the points of bifurcation. Not only knowledge but also moral principles, placing a ban on the dangers for man as man experiments with a system and its

re-organization must be considered as key orientation in such methods of selection.

For a long time, western cultural traditions have predominated the ideal of true knowledge as though self-value. Today the new type of rationality echoing with the ancient oriental ideas of correlation between truth and morality is adopted in science. The subject in the process of getting knowledge should possess not only professional knowledge, understand the ethos of science, should also be oriented not only at non-classical ideals and normative of explanation and description, understand the grounding and be able to give evidence of knowledge, but also carry out reflection of interpretation of values of the scientific activity being conveyed in the scientific ethos. Such reflection is intended to coordinate the scientific ethos' principles with social and moral aspects of values, with represented human ideals.

An important role in the development of new approaches to the problem of humanization of the science of games and those ideas and concepts that are formed at the intersection of philosophy and science, natural science and humanitarian knowledge. In this case, we are talking about the concept of global evolutionism, existentialism, synergetics, noospherology, co-evolution of nature, society, man and electronic-digital technologies. Humanistic ideals perform integration, orienting, regulating functions at the philosophical, transdisciplinary levels of knowledge, where scientific knowledge is in contact with ethical, aesthetic, value-worldview imperatives and attitudes.

In connection with the characteristics of scientific knowledge on the subject of its truth, logical predicates are insufficient, sociocultural factors and value-ethical dimensions are necessary. Through the prism of the latter, truth is achieved. They are the conditions for the embodiment of knowledge in reality. From this point of view - good, good, beauty, freedom, and truth - these are not only sociocultural values, but also humanistic ideals developed by society. They are the standards of human transformation of oneself and the world, and also are the criteria for the dynamics of scientific knowledge. This problem gains importance in connection with the consideration of the ethics of science, computer information ethics, digital ethics and axiology [20], and the social and moral responsibility of a scientist.

IV. CONCLUSION

A brief summary is as follows. Moral issues of Farabi link with the intellectual qualities of man, his mind, and the ethical categories are as certain norms and rules of moral

relations. The scientist believes that only a person with high moral qualities can achieve great success in the scientific field. In proceedings of Beruni have been resolved the problems associated with the ethics of the scientist. Such concepts as the truth, morality and purity that are relevant to a real scientist, capable to make a wide scientific generalizations and theoretical conclusions complement each other. The idea of the unity of the human mind and moral-humanistic qualities is clearly delineated in the concept of Ibn Sina. The core of knowledge and the establishment of moral relations between people is wisdom. The value of knowledge is determined by its role in the moral improvement of a human being and a society. Moral-humanistic, valuable measurements inherent in scientific knowledge and the scientific revolution of the XVII century is abundant material for the study of this thesis. Scientific knowledge of Descartes, Boyle, and Newton are designed to explain, to put on a scientific basis the most important moral and humanistic problems of a man of the XVII century. Thus, the scientific and philosophic concepts of natural scientists existed in the studied period are characterized with its closeness to the modern interpretation of the thinking process, deep understanding of the role played by moral ideals and norms in the process of cognition. Being in the forefront of scientific development accompanied with understanding of the complex self-developing systems there emerge points of growth of new moral and human values and philosophic guide lines which open new horizons to the dialogue between cultures. This dialogue is necessary to develop the new strategies for life activities of human conditions of globalization, as the human species search for ways out of global crisis caused by modern technogenic civilization.

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