

CRITICAL RATIONALISM AS A METHODOLOGICAL MEANS OF SCIENTIFIC KNOWLEDGE

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ABSTRACT

The method of critical realism on the methodology of scientific knowledge of K. Popper, one of the famous philosophers of the twentieth century, is important in determining the solution of current problems of today. In the article, the author substantiates from his point of view that critical rationalism as a method can criticize theories, hypotheses and thereby improve them, create new theories and doctrines, influence the development of science. The article identifies the philosophical foundations of K. Popper's views and makes a comparative analysis.

Keywords: critical rationalism; scientific research; to know; scientific knowledge; empiricism; intuition; intellectualism; positivism; induction; deduction; problem; the truth; falsification;

1. INTRODUCTION

The English logician and sociologist Carl Raymund Popper has a special place in the study of the methodology of scientific knowledge and in the formation of the philosophy of science. K. Popper began his scientific research with the study of neo-positivism, and then moved on to the study of the ancient philosophical problems of rationalism. His works include *Open Society and Its Enemies*, *The Poverty of Historicism*, *Objective Knowledge*, *An Evolutionary Approach*, and *Realism and the Purpose of Science*. In this article, we turn more to Popper's *Assumptions and Refutations* (1963), which reflects his views on the philosophy of science and the method of knowing critical rationalism. This is important in two ways: first, the study of the method of criticism is of scientific and practical importance in the West, where it has become a tradition to glorify outdated views at the level of great discoveries and divine prophecies; the second is that although philosophy, logic, and epistemology are taught in the relevant fields and specialties of educational institutions, so far there are few specialists in these fields who have advanced new ideas and views and created works comparable to modern epistemological research.

This situation makes it difficult to effectively use the principle of criticalism in philosophy in the study of modern problems. We believe that the study of Popper's theoretical and philosophical conception of critical rationalism will help to overcome these shortcomings.

2. LITERATURE REVIEW

2.1 a brief history of some rational views

Unlike other periods, the bold and colorful theoretical and philosophical research of antiquity began to take on a scholastic, speculative character by the Middle Ages. Depression and the worship of authorities prevailed. It is true that epistemological depression is rooted in Plato's philosophy, but medieval philosophy turned depression into a stable reality, opposing the idea that it is difficult for the human mind to know the world, authority, and transcendence. The doctrine of the sinfulness and weakness of man, and the interpretation that his destiny and aspirations were under the control of God, were characteristic of medieval religious and philosophical teachings. The disbelief in the human mind, the worship of authorities, gods, and transcendence, had a negative effect on subsequent scientific research and the development of thought. For example, F. Bacon and R. Descartes, who started the philosophy of the New Age, could not escape from this influence. That is why K. Popper calls both F. Bacon's empiricism and R. Descartes' intellectualism wrong. According to Popper, the optimistic epistemology of Bacon and Descartes is based on Plato's theory of the anamnesis that the human soul knows everything before it is born, because "spirit and things are similar, related." Indeed, Bacon believed that if truth does not manifest itself, man is compelled to manifest truth because man has the power to know, and Descartes believed that man knows truth through his emotions and intuition, and can distinguish truth from lies, errors and delusions. Bacon's epistemological optimism is based on the idea that man knows the "reality of nature (vegastitas patugae)", while Descartes' epistemological optimism is based on the idea that man knows the "truth of God (vegastitas dei). "Hence, belief in the divine reality of knowledge is inherent in all three philosophers. At the same time, epistemological depression is also a hallmark of their philosophy. For example, Plato's theory of anamnesis argues that when a person is born, the soul loses its cognitive capacity, which means that man is born ignorant, and in his work called "The Republic", he puts forward the inhumane idea that only philosophers know the truth. Bacon and Descartes also follow him. According to them, only ignorant people do not see and know the truth and existence of nature and God.

Man's ignorance is caused by his sinful birth, his superstitions, and the forces that defile the mind with lies. In order for man to know the truth of nature and God, he needs authorities to "open his eyes" to reveal these causes, to expose their harmfulness. Authority repeatedly proves the existence of truth; thus it protects people from going astray and teaches them how to think and live. In fact, it is a lack of trust in one's intellect, an attempt to standardize one's research, and a way of life that follows tradition. Bacon and Descartes' theory that nature, the truth of God, cannot be seen and known only by ignorant people is contradictory. If truth exists in the form of nature and God, it is impossible for man not to see or know them; How can a person not see or know what exists? If a person is born ignorant, if his mind is superstitious, how can he know the truth? In this case, isn't the existence of truth in doubt? If a person has the power to know, he is unaware either because of himself or because of others. This means that not everyone knows the truth, only some people. These "some people" are authorities. In his works "The Republic" and "Phaedo", Plato elevates philosophers to the level of authority, because the truth, the whole, is known to certain categories of people, that is, philosophers. This is a return from anamnesis theory to epistemological depression. The epistemology of Bacon and Descartes is similar. Because, in their opinion, man can know, but his knowledge is within Nature and God. If Plato's epistemology turns some people — philosophers — into authorities, Bacon presents Nature and empiricism, and Descartes presents God and intellectualism as new authorities. Undoubtedly, Bacon and Descartes' epistemology was a bold step toward getting rid of Aristotle's dogma and medieval scholasticism, but it is important to remember that they formed a new "authority of reason and emotion." According to Popper, the philosophers of the New Age failed to solve the problem of the fact that knowledge is the result of human effort, and that cognition and reason are individual and voluntary phenomena. In the philosophy of the new age, of course, under the influence of Bacon and Descartes, the view was formed that man had a divine quality in the form of intellect and emotion capable of knowing the universe, existence, and a human quality related to the limitations of knowledge and human ignorance. K. Popper questions this view. This is because Xenophanes, Heraclitus, and Democritus once noted that it is wrong to consider emotion and intuition as a source of knowledge. Nevertheless, some researchers (phenomenologists and positivists) still consider intuition as a source of knowledge. They say, not feelings and intuition, but "we ourselves are mistaken; emotions and intuition tell the truth, but we distort the truth with various words, phrases, and definitions." (Popper K. Assumption and Refutation. The growth of

scientific knowledge. –M .: Ed. AST, 2004. p-110.) It leads to the conclusion that it is not natural qualities - emotions and intuition, but artificial qualities - man-made expressions, images, words that confuse us. In this way, man-made artifacts are degraded, emotions and intuition are glorified. This is in fact a continuation of Plato's inhuman idea that some people - philosophers - know the truth.

2.2 the role of critical rationalism in the cognitive process

So what is the source of knowledge - an object, an emotion, an intuition, or a word, an expression, an artifact? If there is knowledge in the object, then there is an idea that knowledge is a non-human reality, that there is no need for human epistemological research, that there is no need to suffer and seek truth, that there is divine knowledge, that it does not need human knowledge. To think that an object is outside the process of knowledge, that is, something that does not belong to the source of knowledge, leads to the rejection of the human mind. The deification of the object, on the other hand, leads to the worship of authority, casts doubt on man's ability to think and search independently, and thus man is bound to the object, to authority. If the source of knowledge is in the senses, in the intuition, then the knowledge is transformed into an absolute subjective reality, and any being with feelings and intuition can know and reach the truth. In this case, we come to the conclusion that the truth is obvious to all, that a being with feelings and intuition must believe in these feelings and intuition. There is no need to refer to the object, nor to epistemological research, nor to reason. It is self-evident that such an approach is wrong. Words, expressions, images are artifacts created by man; they are the result of man's epistemological experiments aimed at understanding the universe, the limit. Thus, an artifact cannot be separated from or contrasted with object and epistemological research; it is the result of different interpretations of the colorful relationships of artifact objects and subjects. Therefore, Popper states, "there are many sources of knowledge, but none of them has absolute authority". Man does not know what truth is; There are no criteria or boundaries of truth, and everyone interprets them individually. But the absence of these criteria of truth does not mean that it should be abandoned, but that man strives for the truth and affirms that reason and knowledge are power. As a result, "the more and deeper we go into knowing the world, the more and more clearly we realize our ignorance. In fact, our ignorance is that our knowledge may be limited; our ignorance is infinite ... It is useful to remember that We are very different from each other, but in ignorance we are all equal." (Popper K. The Poverty of Historicism. –M .: Progress, 1993 p-53.) Therefore, the constant search for truth is an opportunity given to a single person,

which leads to the conclusion that "truth is higher than the authorities to whom one worships." According to the philosopher, the way to the truth, to knowledge, is criticism, self-criticism, debate, debate. Questions: "How do you know the truth? What is the source of your confirmation?" Should be replaced by the question How to find and eliminate errors? Because the questions of empiricists urge to seek the truth, knowledge from some authorities, to bring confirmations, proofs from the authorities, so there is no room for independent thinking and research. In scientific research, this is the easiest, but the simplest, method of compiling, repeating existing ideas, adding almost nothing to thinking. "How can I find and fix bugs?" The question leads to the critique of theories and hypotheses as a method of critical rationalism, and thus to their refinement, to the creation of new theories and doctrines. Authority is not a source of knowledge, but criticism, experiment, debate, which protects scientific theories from becoming dogmas, eliminating errors and confusions in them. Scientific research should not contain views, doctrines, or authorities that are beyond criticism. So, on the one hand, it is impossible to find the truth, to reach the bottom of knowledge, and man's ignorance, limited intellect, and limited ability prevent him from understanding the truth, from reaching the essence of the subject; On the other hand, it must not be forgotten that there is a truth that transcends authority and opportunity, that man is given the opportunity to live in constant search for this truth, and only then will man have an interest in scientific research and knowledge. The search for truth is not the only goal of science, we seek not only the truth, but a deeper and new truth. Anaximander's idea that knowledge and scientific theories are not based on observation, that nothing holds the Earth, that it is like a round drum, and that it is at a distance under the influence of symmetrical forces in space, Newton's law of gravitation, This means that there is no way of knowing that begins with observation and experience. Observations and experiments play the role of critical arguments in the development of science ... The importance of observation and experiment is in using them to criticize theories. "Popper writes that good theories in physics generally deny that Bacon's predictions are unscientific, unsubstantiated. The philosopher proposes a method of falsifying theoretical systems, scientific views, as a criterion for demarcation. According to this method, in order for a view to be a scientific theory, its assertions must be able to collide with observations. It is clear that the transformation of ideas about an object into a scientific theory depends on its passing the "test of observations" - the test of criticism and experiment. K. Popper does not forget that both observation and scientific theories are complex realities. He does not draw narrow, one-sided

conclusions about anything as the only truth, but leaves room for criticism. Sometimes it seems that the philosopher deliberately criticizes the mind, the views and theories to argue the reader, but it is important to remember that his epistemology is built not only on rejection, but also on the search for rational evidence, rational thought and rational doctrine through criticism. K. Popper writes, "There is one rational aspect in our quest to know our surroundings, the world, which is to test our theories through criticism. Theories are hypotheses in their own right, we don't know, we just assume. If you ask me, 'How do you know?' 'I'm just happy to hear your objections. If you're interested in my problems, I'm happy to hear your objections, but I'll try to refute your objections." So, in K. Popper's view, science develops through philosophy, cognition through assumptions, criticism, and denial.(Popper K. Assumption and Refutation. The growth of scientific knowledge. –M .: Ed. AST, 2004. C -114.)Therefore, he writes, "Bacon's induction is a myth," calling himself "an opponent of the widespread dogmas of inductivism," and his method of research as "critical empiricism." Popper also rejects Descartes' theory that knowledge begins with emotion, intuition. "I have always been," he admits, "a rival to philosophy, which calls intuition as a source of knowledge."(Popper K. Assumption and Refutation. The growth of scientific knowledge. –M .: Ed. AST, 2004. C - 117.) Science, cognition, philosophy of science in general starts with problems, the desire to solve problems leads to theories. Therefore, Popper does not believe in Bacon's empiricism, which supports experience, nor in Descartes' intellectualism, which supports intuition. Scientific theories are valuable because they aim to solve important problems. Problems can be solved or approached only through a critical approach.

2.3 The peculiarity of Popper's critical rationalism

Criticism and falsification do not completely destroy dogmatism, they reject the regressive aspects of dogma through oral or written evidence, and thus allow for the growth and development of progressive, rational aspects in it. Critical rationalism relies on logical reasoning, deductive reasoning, and observation. "A critical approach," points to K. Popper, "is to be seen as a way of trying to expose our theories and ideas to all the burdens of the struggle in order for more acceptable theories to survive."(Popper K. The Poverty of Historicism. –M .: Progress, 1993.c-66.)

Critical rationalism protects science, scientific theories from unscientific approaches, from following obscure views, from compromising, from indulging in materialism. Compilation is the enemy of materialism, democracy, science; it is

because of them that the malicious views of the authorities are promoted in society as the "only truth." It is impossible to have a "single truth" in a democratic society. Even the most intelligent person cannot find or say the "single truth"; no individual or mind has the right to inculcate such a truth in the minds of men. If there is a claimant, he is obliged to use force, to establish autocratic or totalitarian rule. Critical rationalism, therefore, is a method of self-criticism that helps to distinguish not only scientific theories from unscientific views, but also democracy from non-democracy, sincerity from materialism, and good from evil. Popper skillfully used the method of critical rationalism in his "Open Society and Its Enemies." No significant socio-philosophical or political doctrine that emerged after the second half of the twentieth century was left out of this philosopher's work, under the influence of the idea of an open society. K. Popper sharply criticizes the inhuman, undemocratic theories of Plato, Hegel and Marx that discriminate against human rights, revealing that the historiography of the "great sages" is contrary to development. His "Beware of False Prophets!" The slogan is directed against the worship of authorities. The fate of civilization and development depends on getting rid of bad habits, such as the worship of authorities. In order for totalitarian regimes and the cult of the individual not to emerge, people must strive to think independently, to do something every day to make democracy a way of life. Criticism, self-criticism is one of the most effective ways to turn democracy into a way of life. Where there is no criticism, it is common for officials to abuse their position, to trample on the rights of ordinary people, and to ridicule them, but criticism and social control do not allow autocracy and totalitarianism to rise. This conclusion is drawn from Popper's political and philosophical teachings, the idea of an open society, and critical rationalism.

3. RESEARCH METHODOLOGY

The following methods were used in this paper: comparison, systematic approaches, unity of logic and history, deduction and induction, comparative analysis, ascension from abstraction to concreteness, analysis and synthesis.

4. RESULTS AND DISCUSSION

The study of Karl Popper's theme of critical rationalism as a methodological tool of scientific knowledge yields the following results:

1. Provides opportunities for the formation of creative thinking mechanisms and the development of logical thinking skills in young people.

2. It is used in the management of the state and society, in developing the ability of young people to think critically.

3. It is used for the formation of objective knowledge in scientific research processes.

4. The use of this method in the learning process forces the student or pupils to work on themselves.

5. CONCLUSIONS

Summarizing the above, it can be said that the emergence and development of knowledge, science and scientific theories begins with problems, problems; Experimentation and observation are methods of testing and substantiating theories. The development of scientific knowledge is not due to an increase in experience and observations, but to the critique, falsification, and rejection of scientific theories, and thus to the creation of more perfect, more satisfying theories. Critical rationalism encourages theories to be tested again and again, to determine their viability, and to find ways to overcome their regressive aspects. Criticism imposes a certain responsibility on a person, because criticism is not about discrediting, destroying, or distorting, it is actually about trying to create new views and approaches. Only criticism that assumes such responsibility is rational.

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