

PHILOSOPHY OF SCIENCE: LIMITS AND POSSIBILITIES

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Abstract. Philosophy of science is a section of philosophy that studies the principles, methods, and limitations of scientific knowledge. This article examines the main questions: what is science, what are its limits and possibilities. It also examines historical changes in approaches to scientific knowledge and the role of scientific paradigms in the development of society. Particular attention is paid to the ethical aspects of scientific activity and their significance in the context of modern technocratic reality. The work is based on the works of such authors as K. Popper, T. Kuhn, and P. Feyerabend.

Keywords: science, philosophy, knowledge, boundaries of science, ethics, paradigms.

Introduction Modern science is a powerful tool for understanding and transforming the world. It not only explains natural phenomena, but also allows us to create technologies that change the way of life of society. Nevertheless, science faces a number of questions: how objective are its results, where are the boundaries of human knowledge, and how to regulate the use of scientific discoveries?

Philosophy of science as a discipline promises to explain the nature of scientific knowledge, its strengths and weaknesses. The role of scientific paradigms as defined by T.Kuhn and their effects on the accomplishments of science continues to challenge and confound efforts for answers. In addition, the question of the ethical aspects of scientific activity arises: how can we be sure that discoveries will be used for the good of humanity?

This article tries to study the nature of science, its limits and possibilities and to discuss the major ethical challenges that science faces in the modern world.

Main part Scientific knowledge

Empirical observation, logical analysis and experiment are the basis of a unique scientific knowledge process. Desire for objectivity is one of the key characteristics of science. K. Then popper said the major criterion to make a statement scientific was the possibility of for that statement of hypothesis to be invalid. This is different than metaphysics, in which much of what is said are not verifiable statements.

But the great T. Kuhn paid attention in his work “The Structure scientific revolutions”, that the science was not developing in a line, but by the changing paradigms. Science is objective because though there are different paradigms which set their own standards of how truth is to be found and methodology, but everybody is doing it with a specific historical context is contributing. You may, for instance, have something as different as the transformation of classical mechanics to quantum physics, which altered the notion of what reality is.

Lesser Known Factors That Shall Define the Practical Accomplishments of Science

There is accurate and inaccurate science and there is measurable and immeasurable science.

“Objective limitations” are connected to the idea that there are some things that can not be watched or tested. For instance, no one knows whether consciousness is an emergent property or not, and what exactly happened in the big bang? Scientific historical and philosophical approaches do not yet enable us to analyze these phenomena adequately.

Subjective limitations

include the human factor: The effect of method of research, cultural and social influences, and the dictation of science by economy and politics. For instance, unfair research funding has always been predicated by their revenue returns; this hampers basic research.

The Role of Science

However, science possesses unlimited possibilities to change the existing situation. These are its accomplishments, with which we can address certain challenges, for example, in fighting for climate change, creating a vaccine, or developing artificial intelligence.

Knowledge makes human choices dominant over the natural environment and provides an ability to forecast future, to enhance economic and social efficiency, and thus to increase the world's wealth. For case, genetic research has made it possible for people to explore new frontiers in the medical field whereby one can have a personal treatment to diseases.

Ethical aspects of science

There are few ethical questions that arise with time and with the development of technology they become more significant. It is up to people, to civilize to choose how to apply knowledge for example nuclear energy, genetic modification or artificial intelligence can be used for good purpose and can be used for evil purpose.

P. Feyerabend in his book “Against Method” uses the message that science should not become a dogma. They should work as a multicultural model and appreciate the existence of different opinions. For example, such innovative processes as artificial intelligence development need not only technological but also an ethical framework in order to minimizable risks of unlawful use.

The ethics of science presupposes that scientists are the keepers of the results of their work. There is a need to ensure that these social risks are managed so that resulting interventions will be designed to address as little of a risk as possible while capturing as much of the benefit to society as possible.

Conclusion

Science philosophy helps to recognize the structure of scientific knowledge, to understand its potential and its imperatives. It also underscores the point that administrations can play only a part in scientifically inspired instruction and bring to the foreground the fact that science is fundamentally not only a method of cognizing something, but also a form of activity that must be explained and managed.

In an optimal situation, science must remain a servant to humanity, so it is high time to admit that science is powerless, seek using ethical aspects of research and implement interdisciplinary approach. This is the only way to make □, Science is to live in harmony, and a science that will not be a source of new threats.

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