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SCIENTIFIC RATIONALITY: ESSENCE, TYPES, TREND FOR INTEGRATION, PRACTICAL SIGNIFICANCE

The article covers the problem of particular importance for the contemporary science, that is, scientific rationality, which may be considered under-investigated. In the literature, the issue of sequence of historical types of scientific rationality is analyzed in detail. It breaks down into classical, non-classical, post-non-classical scientific rationality. However, within the framework of the philosophy of science, little attention is paid to the analysis of various types of scientific rationality, including the logical/mathematical, natural scientific, engineering/technical, and social/humanitarian rationality.

Though dozens of academic papers and books cover the issues of logic, mathematics, physics, engineering and technology, social sciences and humanities, general philosophy-related papers lack any essential description of the said four types of scientific rationality, their comparative analysis, and interrelation between them.

In the article, the essence of the logical/mathematical, natural scientific, engineering/technical, and social/humanitarian rationality is demonstrated; their methods, objectives and results are compared; their interaction is accentuated.

In the article, non-scientific and scientific types of philosophical rationality are identified (the former performs the functions of vision rather than gnoseological functions, it includes religious philosophy, existentialism, Nietzsche's philosophy, etc.). The reasons specified in the article substantiate the need to introduce the concept of philosophical-scientific type of rationality associated with the elaboration of issues of logic and methodology of scientific cognition, that are covered in the works of Aristotle, Bacon, Descartes, Hegel, Popper and other philosophers.

It is proven that in the time of substantial advancement of contemporary technology, incorporation of humanitarian values into the domain of natural and engineering sciences and formulation of the issue of ecological and ethical examination of engineering projects will prevent a global ecological catastrophe and collapse of the civilization.

Key words: science, scientific rationality, logical/mathematical, natural/scientific, engineering/technical, social/humanitarian types of rationality.

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