

Cognitive specifics of the disciplinary structure of science (a philosophical and methodological analysis)

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Post-classical models of scientific knowledge have moved on from the diad of the theoretical and the empirical to the triad of experiment, theory and worldview, including style of scientific thinking, research program, paradigm, and the ideal of a scientific theory. Modern, post-classical scientific disciplines demonstrate a specific style of scientific thinking. We can illustrate this using a dynamic style of scientific thinking found in vibration and wave theory as an example. It includes the principle of analogy as its main constituent principle, leading to dialogism being fundamentally inherent in the structure of the theory; multiple interpretations being the norm, in turn, leads to increased reflection and an absence of dramatic breaks between normal and critical theory development stages.

Keywords: science, discipline, theory, worldview, style of scientific thinking, methodological analysis, post-classical rationality

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