

Mary Domski and Michael Dickson, eds.

Discourse on a New Method. Reinvigorating the Marriage of History and Philosophy of Science.

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After the publication of Kuhn's *The Structure of Scientific Revolutions* the marriage between history and philosophy of science seemed inviolable. In this book, a kind of *Festschrift* dedicated to the work of Michael Friedman, a new marriage is proposed, the marriage between history and philosophy of science, based on Friedman's synthetic approach. This new scientific approach, as is well known, aims to reconsider the heuristic value of the Kantian a priori.

Despite the enemies of Kantian philosophy who declared the death of the a priori after the birth of the Einsteinian theory of relativity, the Kantian a priori seems to be still alive and applicable in philosophy of science. Michael Friedman is one who hasn't fallen into the net of Kant's enemies, and has re-evaluated the role of the a priori in philosophy of science. For the Kantian a priori he proposes a double meaning: a domain of immutable, self-evident and necessary a priori knowledge, and a relativized and dynamic a priori. (An analogous theoretical operation was effected by the Italian philosopher of science Paolo Parrini, and by Hans Reichenbach in his *Relativitätstheorie und Erkenntnis Apriori*, 1920). This is the intellectual and conceptual frame of the synthetic approach Friedman uses to analyze the development of history and science, from Newton and the scientific revolution to Einstein.

As Mary Domski and Michael Dickson write in the 'Introduction', 'Taking for granted that Thomas Kuhn's *The Structure of Scientific Revolutions* (1962) had convincingly shown that philosophers of science ought to take seriously the historical development of science, Friedman suggests that historians of philosophy ought to take seriously the historical role that science has played in philosophy. ... Friedman argues, in particular, that an important task for the historian of philosophy is to situate the emergence and evolution of philosophical ideas in their revolutionary scientific context' (3-4). That is why Friedman, following Marburg School Neo-Kantism, comes back to Immanuel Kant. According to the German philosopher, Newton's *Principia* gave to science its definitive form, but the essential point was to explain how this science was possible. Thus, philosophy, in Kant's view, becomes a meta-discipline whose object is not natural phenomena but the science used to describe them. After the crisis of the Newtonian paradigm, Kantian philosophy was declared dead. However, Friedman argues, Kantian transcendental philosophy was still right, because when one scientific paradigm must be rejected in favor of another, philosophers and scientists need a new source of ideas situated on a different level, that is to say a meta-scientific level. This is exactly the

Kantian paradigm of transcendental philosophy. But there is something more because, as Friedman well understands, it means that philosophy and science need each other: 'It is of the nature of science and philosophy to interact' (7).

As everyone now knows, the conditions of possibility of Newtonian physics were not, as Kant thought, immutable; but Friedman considers Kantian transcendentalism still correct because doing so is necessary to explain the inner revolutionary changes of science. Thomas Kuhn divided science into two thresholds, *normal science* and *revolutionary science*. Accepting Kuhnian theory of scientific paradigm and a relativized and dynamic Kantian a priori, Friedman instead proposes a more complex system, characterized by three levels:

- a) empirical laws (like the law of universal gravitation and Einsteinian equations);
- b) principles constitutively a priori of geometry and mechanics (similar to Kuhnian paradigms and, as a consequence, not immutable but subject to deep changes during the periods of conceptual revolution);
- c) meta-frames or philosophical meta-paradigms useful to explain the passage from a paradigm to one another.

In this way Friedman overcomes the problem of incommensurability, accepting the distinction between instrumental rationality and communicative rationality postulated by Jurgen Habermas; but at the same time he proposes a retrospective communicative rationality that allows to scholars working at a subsequent stage to understand all the results of the previous stages. Only in that way, thinks Friedman, can Kuhnian conceptual relativism be overcome.

As Friedman writes in his concluding essay, 'the approach to transcendental philosophy I call the dynamics of reason is intended not only to make sense of the historical progression from Newton to Einstein, but also to contain a response, in particular to Kuhn's conception of scientific revolutions. The relationship between the two projects... is that Kuhn's central notion of a temporality upon paradigm definitive of a given episode of normal science is analogous, in important respects, to the notion of the relativized constitutive a priori first proposed by Reichenbach' (712). That is why 'the transition from Newton to Einstein centrally involves a succession of relativized constitutively a priori principles (the Newtonian Laws of Motion in the context of the *Principia*, in the light principle and the principle of relativity in the context of special relativity, the light principle and the principle of equivalence in the context of general relativity), and the existence of such diverse constitutively a priori principles, on my view, captures the essence of Kuhnian incommensurability' (713-14).

Friedman's reflection provides a solid scheme useful for analyzing history and philosophy of science together, and in this book many leading scholars provide outstanding essays contributing to the debate over Friedman's synthetic approach. The book starts with an Introduction by Domski and Dickson, 'Discourse on a New Method, or a Manifesto for Synthetic Approach to History and Philosophy of Science'. After this, the volume divides into six parts: 1) 'The Newtonian Era' (with contributions of Domenico Bartoloni Meli, William R. Newman, Mary Domski and Andrew Janiak); 2) 'Kant' (with contributions by Alison Laywine, Charles Parsons, Daniel Sutherland, Daniel Warren and Frederick C. Beiser); 3) 'Logical Positivism and Neo-Kantianism' (with contributions by John Michael Krois, Paul Pojman, Thomas Ricketts and Don Howard); 4) 'History and Philosophy of Physics' (with contributions by John Norton, James Mattingly, Michael Dickson, Scott Tanona and Thomas Ryckman); 5) 'Post-Kuhnian Philosophy of Science' (with contributions by William Demopoulos, Richard Creath, Noretta Koertge, Robert DiSalle and Mark Wilson). Part 6 is Friedman's long concluding essay, 'Synthetic History Reconsidered'.

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