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New Philosophies of Science in North America--Twenty Years Later: A Selective Survey
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Theodore Kisiel's extensive survey of philosophy of science in the United States was published in this journal in 1974. The starting point of his report was the demise of logical positivism and the emergence of historically oriented approaches to the philosophy of science. Kisiel's account began with Carl Hempel's and Herbert Feigl's attempts to sustain the spirit of logical positivism, even while recognizing the untenability of many of its core doctrines and concepts. The work of Thomas Kuhn and Paul Feyerabend then took center stage as having focused the opposition to positivist doctrines by offering an alternative direction of inquiry. The most prominent outcome of these new developments was the new cross-disciplinary fusion of History and Philosophy of Science (HPS), in which philosophy of science was reconceived as "internal history" of science rather than its ahistorical logical reconstruction. Philosophers committed to HPS were still primarily engaged in the "rational reconstruction" of scientific knowledge, but the focus of their reconstruction was the historical emergence of scientific methods, theories, and ontologies rather than the formal structure of confirmation, explanation, and theory reduction. Among the philosophers whose work figured most prominently in his prospective discussion of new directions in the field were Imre Lakatos, Stephen Toulmin, Dudley Shapere, Larry Laudan, Mary Hesse, and Peter Achinstein. Kisiel noted that formal approaches to philosophical reconstruction were still being pursued by some philosophers, but a formal semantics drawn from model theory was beginning to supplant the axiomatic structure the positivists had imposed upon theories construed as sentences (e.g., Sneed 1971). He also cited the growing importance of philosophical analysis of particular sciences or theories within them, but the most evident exemplars were still in the philosophy of physics.

In the ensuing twenty years, internalist History and Philosophy of Science has not fulfilled the promise that led Kisiel and many other contemporary surveyers of the field to see it as the wave of the future. Indeed, within a few years after Kisiel's report, the most widely accepted approach within American philosophy of science was scientific realism, while many other philosophers instead urged the abandonment altogether of any general philosophy of science in favor of philosophies of the various sciences. In the latter case, while relativity theory and quantum mechanics continued to attract philosophical attention, the most strikingly new development was the growth of philosophy of biology, psychology, and to a lesser extent the social sciences. Scientific realism also involved a renewal of naturalized approaches to epistemology and philosophy of science, and this commitment has led some philosophers toward models of scientific inquiry drawn from cognitive psychology and cognitive science more generally. A small but influential backlash against realism has attempted a renewal of positivism that would rescue its fundamental insights from apparently wrong turns taken in the development of logical empiricism in the 1940's and 1950's. More recently, however, American philosophy of science has undergone a reprise of its 1960's encounter with history in coming to terms with new developments in the sociology of science, and to a lesser extent in feminist studies of science.

When the new sociology of science first came to the attention of American philosophers, their predominantly hostile reaction paralleled the initial assimilation of Kuhn and Feyerabend as "irrationalists" and "subjectivists." These initially unproductive encounters have increasingly been supplanted by more constructive interactions. Such attempts at rapprochement range from