

Section 13

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Title: The History of the Philosophy of Science: A Broader Perspective

In tracing the history of the philosophy of science, there has emerged a tendency to become fixated on one line of development, which has constituted the point of reference to which all commentators are expected to orient themselves, no matter how fundamental their criticisms of it, no matter how deep their commitment to charting a new way forward. The consensus undoubtedly is that the five main dramatis personae in 20th century philosophy of science are Carnap, Popper, Kuhn, Lakatos and Feyerabend. In reaching further back Hume and Mach are counted as their predecessors.

I do not wish to doubt that this line of development has been an important one and that anyone working in this discipline without a thorough knowledge of the history of its major shifts and its present-day twists and turns would deserve harsh judgement from his colleagues. My point, however, is to call attention to the fact, too often neglected in this milieu, that this is not in fact the only major line of development in 20th century philosophy of science.

There is also the line of development stemming from the very bold and formidable work of Engels, which has given rise to a rich and fruitful tradition in the philosophy of science, one with a very different relationship to both philosophy and science, but nevertheless a full-blown tradition in the philosophy of science, in its own right, with its own history, its own shifts, its own very fascinating twists and turns. However, no one is judged badly by his colleagues for being utterly oblivious of it and those who bother to think of it consider the sideward glances at Marxism on the part of Popper and Lakatos to be as much as it deserves, despite the fact that these forays have not been characterised by very full knowledge or very high standards of argument.'

Its history is known hardly at all and, outside Eastern Europe, only the vaguest of caricatures of it prevail, with the name most readily connected

with it almost inevitably being that of Lysenko. Lysenko has been part of it, to be sure, but so indeed have Bernal, Haldane, Langevin, Joliot-Curie, Geymonat, Oparin, Fok, Ambartsumian, Omelyanovsky, Kuznetsov, Gott, Ursul, Hörz, Hollitscher.

From the beginning, the Marxist tradition bravely set itself the task of elaborating the philosophical implications of the sciences of its times with a view to working out a scientific Weltanschauung adequate for its epoch. Engels' anti-positivist materialism was an extraordinarily impressive achievement. He did not shrink from the great basic questions that have perplexed the philosophers of the ages, but he did insist that attempts at answers be grounded in the best empirical knowledge of the times. In so doing, he not only laid the foundations of a scientifically grounded world view, but set forth views on many issues, such as reductionism, the history of science and the logic of scientific discovery, that not only anticipated certain contemporary theories, but are still in advance of them.

Throughout its subsequent history, there were new challenges to meet, arising out of the revolutionary advances in the natural sciences as well as out of the emergence of new philosophical trends, giving rise at every step along the way to new controversies, new arguments for contending paths of development. It is a complex tradition, with Marcuse or Colletti as far from Engels as Feyerabend from Carnap. Nevertheless the ideas of the Marxist classics have fared far better than those of the Vienna Circle. The one tradition is still vital; the other at point of crisis. What is the difference ?

The tradition stemming from the Vienna Circle based itself on an extremely taut and constricted notion of rationality that functioned within a severely stripped world of atomistic facts and arbitrary values. Much that had traditionally come within the scope of reason was ruled out of bounds and the great striving for a vision of the world giving momentum to the history of philosophy was renounced in no uncertain terms. This renunciation of philosophy in the name of science was, ironically, as far removed from the historical sphere of science as it was from that of philosophy.

Reductionist theories, however, issue eventually in the most extreme counter-reactions. What is left out of account does not cease to exist and is always there insistently making its presence felt, sometimes coming back in the strangest and most unexpected ways. The successive modifications of this tradition over the years - from verificationism to falsificationism, to the historicism of paradigm shifts, to the methodology of scientific research programmes - reflect the pressure of reality on conceptions too restricted to give an adequate account of it. But these modifications, whatever shocks they set off in the rather sheltered academic communities in which they occurred, were essentially timid and inadequate adjustments that still left too much out of account and still had too little to do with actual science. The anti-positivist opposition was not so anti-positivist as it imagined itself to be.

Paradoxically, the obsession with metascience was the surest way of failing ultimately to come to terms with science itself. The voluminous literature, first working out demarcation criteria and later analysing the logic of scientific discovery, had its origins in the impulse to confront real and important issues of this century: to distinguish science from non-science, to establish proper procedures for assessing scientific theories, to illuminate the process in which scientific theories emerged, contended with one another and became accepted. Much of it has been of great value. However, much of it has become fixated at the level of a narrow, introverted methodologism that constitutes a rearguard action to avoid coming to terms with the real challenge offered to philosophy by contemporary science. Reams upon reams have been devoted to a tedious and myopic analysis of the methodology of scientific discovery, displaying a supreme indifference to the actual results of scientific discovery, much less to what these results imply for working out a philosophical world view. The philosophers, essentially technocrats, abandoned the field, leaving it wide open for the gurus of the counter-culture.²

Even when a new emphasis on the history of science became the fashion after Kuhn, the situation remained deeply unsatisfactory. The whole debate over the relation between the philosophy of science and the history of science

demonstrated painfully the impotence of the rigidified type of rationality that held sway. The superficial lines of connection drawn between an ahistorical philosophy of science and a non-philosophical history of science left the matter quite unresolved.

Finally, the status of rationality had become so eroded in this process that an explosive point was reached, culminating in two opposite and extreme negations of its initial impulse. On the one hand, the Platonistic third world of Popper, an attempt to preserve rationality by drawing it out of the historical turbulence into a protected and undisturbed realm of its own. On the other hand, the dadaistic anarchism of Feyerabend, in which rationality is replaced by a mixture of subterfuge, rhetoric and propaganda and science becomes indistinguishable from witchcraft. No one should be surprised. A shrivelled rationality relentlessly brings forth a wave of irrationalism. Positivism inevitably gives way to zen. It is the logic of technocracy to throw up the many varieties of hippie mysticism. This is the natural tension of dualist theories: the humdrum days on the one hand and the miracles on the other.³

The whole rhythm of the Marxist tradition has been different. From the onset, it has operated with an integrated, full-blooded and consciously historical conception of rationality and has given full scope to the deepest impulses underlying the traditional philosophical enterprise. At the same time, it has developed in the most intimate interaction with the historical development of science and in the process has brought philosophical analysis directly to bear on the actual results of scientific discovery. Under socialism, there has developed an atmosphere of sustained and systematic collaboration between philosophers and natural scientists that is unparalleled anywhere else in the world.

The Marxist tradition has faced squarely the challenge posed to philosophy by science in our epoch and has not shied away from the task of synthesis, from the task of constructing a comprehensive view of the world grounded in the best knowledge of nature and in continuity with the best traditions of human thought. Not that all is settled. Not that there are no gaps. Not that there have not been, and may yet be, regressive episodes. Nevertheless, it is a tradition in the process of healthy development, with a clear way into the future. Moreover,

it shows the way out of the impasse reached by the other tradition, for it connects rationality in a deep and integral way with both the world of science and the world of human values. In so doing, it answers to the most burning need of our time, providing a way beyond reductionism, beyond dualism, beyond the soul-destroying fragmentation characterising both the sterile ascetism of the Anglo-American philosophy departments and the exotic indulgences of the counter-culture. It is a way of seeing the world whole, without having to suppress the deepest longings of the human spirit and without doing violence to the rigorous demands of science.

Notes:

1. There have been notable exceptions among historians of science. David Joravsky's Soviet Marxism and Natural Science (London 1961) and Loren Graham's Science and Philosophy in the Soviet Union (London 1973) have done much to lift the veil of ignorance hanging over the English-speaking world regarding the history of Soviet philosophy of science.
2. Not that all philosophers of science in the Anglo-American academic milieu fit this picture. Various contributors to the Boston Studies in the Philosophy of Science series have pushed at the boundaries of this tradition in a most radical way. It is nevertheless interesting to note that the really striking and constructive work in epistemology is being done by such as Marx Wartofsky, who is actually a Marxist, and in ontology by Mario Bunge, who is in reality far closer to his Marxist colleagues than he cares to admit. Cf. Wartofsky "The Relation between Philosophy of Science and History of Science" Essays in Memory of Imre Lakatos (Dordrecht/Boston 1976); "Is Science Contemporary Rationality?" 16th World Congress of Philosophy (Dusseldorf 1978) and Bunge Method, Model and Matter (Dordrecht/Boston 1973); Treatise on Basic Philosophy 3 (Dordrecht/Boston 1977).
3. This turn of phrase comes from Antal Serb, a Hungarian literary historian, who used it to describe bourgeois literature. The Hungarian philosopher, Josef Lukacs, has applied it in his analysis of positivist philosophy in Dialectical Materialism and Modern Science (Prague 1978), p. 31.