The European Legacy

Reconstructing Scientific Revolutions: Thomas S. Kuhn's Philosophy of Science, Paul Hoyningen-Huene, translated by Alexander T. Levin (Chicago: University of Chicago Press, 1993) 310 + xx pp. $40.00 cloth $15.95 paper.

This book is a scholarly and comprehensive review of Kuhn's philosophy of science. In the foreword, Kuhn himself strongly endorses it as an accurate interpretation of his sometimes elusive views. Focusing on the philosophical aspects of Kuhn's work, the book is primarily concerned with problems of reference and meaning change. Neither traditional analytic approaches to meaning nor more recent reference-based approaches can adequately account for the phenomena Kuhn uncovered. This has led to bafflement and outright rejection of Kuhn's views, but more often it has led to clever but deplorable misreadings. Hoyningen-Huene draws on both analytic and Continental tools to give us a lucid and consistent rendition of Kuhn's philosophy. Perhaps his greatest achievement is not his illumination of the richness of Kuhn's views but his bridging of the Anglo-American and Continental traditions.

The book has three parts. The first deals with the historiographic basis of Kuhn's views. The second deals with Kuhn's conception of scientific knowledge and its relation to the world. The final part applies the resources of the earlier parts to the analysis of normal science, scientific revolutions, and the dynamic of scientific revolutions. There is an epilogue that discusses the nature of reality in Kuhn's philosophy of science. Also included is a bull bibliography of Kuhn's works and an extensive listing of secondary literature.

Kuhn's philosophical views cannot be understood independently of his historiography. He wanted a historically accurate reconstruction of old conceptual systems—unlike his predecessors, who placed the history of science in light of (presumably) correct current scientific views, or many of his followers, who place the history of science in terms of some (presumably universal) underlying social forces, like the will to power. Historical scientific texts must be interpreted hermeneutically, the most significant consideration being the injunction to seek out apparently erroneous, implausible, or absurd passages as keys to the (generally implicit) presuppositions of the author of the text. Hoyningen-Heune sees Kuhn's goal as "a universal phase model of scientific development" (p. 26), where the universality is qualified by the admission of "minor variant[s]" to the general pattern of

prenormal science followed by normal science and subsequent revolutions. Kuhn's main focus, of course, is on the revolutionary phase transitions.

The object of science is the natural world, but Kuhn is deeply ambiguous about its nature (p. 32). Hoyningen-Huene argues persuasively that for Kuhn, nature is on one had the phenomenal world and on the other hand the world-in-itself. This is similar to Kant's view except for Kuhn's radical introduction of multiple phenomenal worlds (p. 35). Whereas Kant believed there was only one basis for the phenomenal world, required by the preconditions for thought and sensation, Kuhn sees a plurality of phenomenal worlds, made of inseparable presuppositions of *both* thought and sensation. Perception is *of* a posited world-in-itself, common to all paradigms, but this world is observed *through* theory-specific preconceptions and practices that are constitutive of our thought. The transcendent world appears to us only through a phenomenal world that is already partially interpreted. Depending on implicit background assumptions, a transcendent object of sensation can have quite different and incomparable meanings. Both theory and the transcendent object of sensation combine inseparably to produce the Given. The plurality of worlds cannot be observed directly, since direct observation implies an accessible common perspective that just does not exist. Evidence of multiple phenomenal worlds must be indirect, originating in the misunderstandings, miscommunications, and apparent absurdities the historian observes (thus the connection to Kuhn's historiography).

The rest of the book applies the insights of the first two parts to the analysis of key Kuhnian concepts: paradigm, normal science, and scientific revolution, followed by a discussion of the dynamics of scientific revolutions. Revolutions are necessary products of normal science, which produces the anomalies that are their point of departure. Anomalies constrain possible resolutions of periods of scientific crisis by restricting the search space of adoptable replacement theories (not just any resolution that satisfies social desiderata is acceptable). New theories can be embraced only by conversion, since their acceptance requires embracing a new phenomenal world, based on new presuppositions, through which the transcendent world is conceived. The evidence bearing on the new theory requires reconstructing the phenomenal world with the resources of the new theory itself, making piecemeal adoption of the new theory impossible. As Hoyningen-Huene makes clear in the epilogue, this in no way implies unfettered idealism or immaterialism.

The thing that impressed me most about this book was the scholarly way Hoyningen-Huene unpacks some serious ambiguities in Kuhn's writings and puts them squarely in the philosophical tradition, while also showing how radical Kuhn's views really are. He also shows why Kuhn's work does not support the broadest forms of relativism, since paradigms are connected through a common set of historically generated problem cases. The book is an essential tool for Kuhn scholars and a good introduction to Kuhn's views for philosophers in either the Continental or Anglo-European traditions. It should set a new standard for Kuhn scholarship.

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