



On Historicizing Epistemology

An Essay

By Hans-Jörg Rheinberger

After the nineteenth century had seen a new empiricism in the philosophy of science, nourished by the rise of the experimental sciences, the end of that century brought a crisis of reflection on scientific knowledge. Only gradually, in the course of the twentieth century, did a broadly articulated new reflection on science develop that began to historicize epistemology in various ways. The idea of science as a process replaced the obligatory view of science as a system.

One single science gave way to many sciences, not reducible to one another. The premise of the present essay is that the historicization of epistemology represents a decisive moment in the transformation of twentieth-century philosophy of science.

[Introduction] After the nineteenth century had seen a new empiricism in the philosophy of science, nourished by the rise of the experimental sciences, the end of that century brought a particular kind of crisis--a crisis of reflection on scientific knowledge--without an

immediate solution in sight, or even a generally accepted alternative to the century's legacy. [...] Only gradually, in the course of the twentieth century, did a broadly articulated new reflection on science develop, one that was fueled by various national traditions and contemporary scientific developments and that began to historicize epistemology in various ways. As a result, the contexts of discovery and justification, so neatly separated before, were joined again. The idea of science as a process replaced the obligatory view of science as a system. One single science gave way to many sciences, not

reducible to one another. This movement cannot be understood simply as something internal to philosophy or the theory of science; it must be seen in a broader context, that of dynamic embracing the development of the sciences in their entirety, and this in turn has to be placed within the social and cultural context of the twentieth century as a whole. The premise of the present essay is that the historicization of epistemology represents a decisive moment in the transformation of twentieth-century philosophy of science.

[...]

My use of the term epistemology requires a brief explanation. I do not use it as a synonym for a theory of knowledge (*Erkenntnis*) that inquires into what it is that makes knowledge (*Wissen*) scientific, as was characteristic of the classical tradition, especially in English-speaking countries. Rather, the concept is used here, following the French practice, for reflecting on the historical conditions under which, and the means with which, things are made into objects of knowledge and the process of generating scientific knowledge is initiated and maintained. If I am right, the turn from the nineteenth to the twentieth century marked a pivotal point, whereby the theory of knowledge in the received sense started to be transformed into epistemology in the sense in which I use the term here. This shift also marked a transformation of the problem situation. A reflection on the relationship between concept and object from the point of view of the knowing subject was gradually replaced by a reflection of the relationship between object and concept that started from the object to be known. This shift

in the problem constellation is at the same time both at the core of epistemology and the point of departure for its historicization. Not by chance, an epistemology and history of experimentation crystallized conjointly. The question now was no longer how knowing subjects might attain an undisguised view of their objects, rather the question was what conditions have to be created for objects to be made into objects of empirical knowledge under conditions to be determined.

This change went with another shift of interest in the theory of knowledge. The previous orientation of finding and presenting the correct scientific method, which would be obligatory in all possible contexts, was replaced by a detailed interest in what scientists actually do in pursuit of their specific research. This change also made possible the question of whether scientists' actions, instead of following a timeless logic, were themselves subject to a historical development whose temporal course could be followed and whose particular conditions had to be ascertained. Historicization of epistemology thus also means subjecting the theory of knowledge to an empirical-historical regime, grasping its object as itself historically variable, not based in some transcendental presupposition or a priori norm.

[...] The present investigation will also show how the process of historicization to which epistemology was subjected in the twentieth century was closely connected with the development of the sciences in this period. In parallel with the historicization of the philosophy of science, a process unfolded that can be described as the epistemologization of the history of science. [...]



Clipping of “Essai d’une distribution généalogique des sciences et des arts principaux” according to Diderot and d’Alembert’s Encyclopédie. Published in: Pierre Mouchon, *Table analytique et raisonnée des matières contenues dans les XXXIII volumes in-folio du Dictionnaire des sciences, des arts et des métiers, et dans son supplément*, Vol.1, Paris, Panckoucke, 1780.

[Conclusion] We have reached the end of this journey, which has led over a century of reflection on the sciences, their constitution and their changes. It began with the idea of a kind of mimicry, the historical pursuit of the inductive course of the sciences, purged of its accidental hesitations, and led via a series of shifts in the historical understanding of the relationship between science and technology to the opening up of a field that took shape, not least in the debate with phenomenology after the First World War, and finally flowed into the quest for a new definition of the age of modernity at the end of the Cold War. What began as epistemological reflection on the emerging of

classical mechanics opened out into different approaches and attempts at a historical epistemology. [...] In the course of time, historical reflection on epistemology began to merge with epistemological reflection on the history of science. It is no accident, seen from this perspective, that means and media have moved center stage--gradually but increasingly--in a comprehensive analysis of scientific practices in all their discursive and material dimensions. If it is ultimately from this shift that the question of a historical anthropology of the sciences has been newly raised, the latter should not be misconstrued as a return of anthropocentrism, either in its empiricist-decisionist variant or in

its rational-creativist one. It should rather be read as an attempt, in the context of a basically changed system of coordinates of the growth of science, no longer defined in Cartesian terms, to newly assess the role of human actors and their changing position in a network that embraces them and yet allows them to remain de-centered.

[...]

[...] There was a kind of persistence of a set of problems, which time and again arose from different perspectives and in different contexts. These problems were raised and re-actualized repeatedly by the developmental dynamic of the sciences in the twentieth century itself. If we wanted to seek a continuity, it would be the continuity of changes and breaks that the sciences underwent in this century. Correspondingly, there is a certain justification in maintaining that at the end of the century there is no longer any epistemology fruitfully intervening in discussion of philosophical questions of the sciences that is not permeated by historical questions. The idea of a linear development of knowledge, continuous and cumulative, from a teleological perspective, has gone, along with the idea of a unitary science that would embrace everything, centered firmly in physics. In its place, however, as the preceding presentation has shown, we do not have a new prevailing and compelling model. The space of his-

torical epistemology has itself become plural in parallel with the course of its development. Perhaps it is a lesson learned from the pluralization process of the sciences in the twentieth century that such unity is not needed in order to advance. Historical epistemology has its own permanent laboratory in the past and future history of the sciences.

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