Peter McLaughlin

# Rationalism and the History of Science

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I came to the Wissenschaftskolleg with the primary aim of wrapping up three existing projects and opening up two new ones. I was moderately successful in completing the older projects and the new ones have begun to take some kind of shape.

With the help of the secretarial staff at the Kolleg, I was able to see my long since completed *Kants Kritik der teleologischen Urteilskraft* (Bonn: Bouvier, 1989) through the press. I was also able to complete the penultimate draft of a somewhat modified English language version of the book, which will be published in 1990 by Edwin Mellen Press. A book on Descartes and Galileo that I am editing (and co-authoring with Peter Damerow, Gideon Freudenthal, and Jürgen Renn) is in the same stage of completion and will be published in 1990 by Springer-Verlag under the title, *Free Fall and Compound Motion. Exploring the Limits of Preclassical Mechanics.*

The two new projects renew old interdisciplinary *Arbeitszusammenhänge* in Berlin. The first project builds on the foundations of the analysis of conceptual development in science, in particular the transformation of concepts in the Scientific Revolution of the 17th century documented in the above mentioned book on Galileo and Descartes. My particular interest now focuses on philosophical questions about the epistemic status of experimental manipulations which are constitutive of modern science. Here I was able to work with Peter Damerow (Max-Planck-Institut für Bildungsforschung) and Wolfgang Lefèvre (Freie Universität) and other members of their Colloquium including my fellow Fellow, Jürgen Renn. My colloquium at the Kolleg presented an attempt to work out an inter-

pretation of the classical rationalist tradition in philosophy from Descartes to Kant which allows for a further development towards a philosophy of science as specifically *experimental* science and which can deal with the ensuing pragmatic consequences for the claims to validity of scientific theories.

The second project carried out in cooperation with Hans-Jörg Rheinberger of the Max-Planck-Institut für Molekulare Genetik involves a historical study of the development of theories of heredity and generation in nineteenth century biology. We are studying the determination of theory and concept formation in what eventually became genetics by the technical means of experimentally manipulating the systems investigated. The point is to analyze the differing developmental paths of the laboratory search for the material substrate of heredity and field research oriented on the practice of breeders and concentrating on the manipulation of phenomenal traits. Both paths come together in the establishment of classical formal genetics at the beginning of this century. I am particulary interested in two aspects of this development, namely the extent to which the limits in the technical means put constraints on the horizons of theory formation and the extent to which such means channel research in particular directions by determining what kinds of projects are feasible.

Both these projects have benefited greatly from many informal discussions with colleagues at the Kolleg and at other Berliner institutions.