

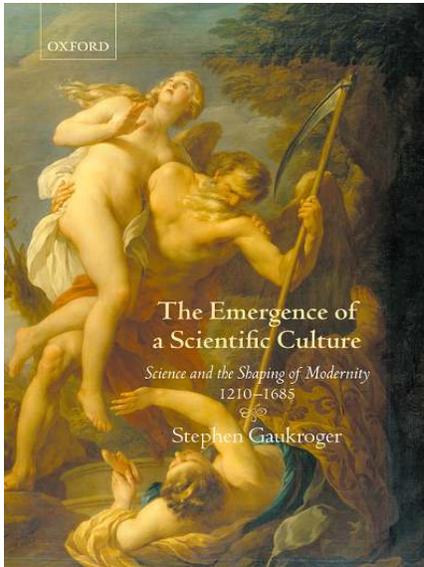
# NATURAL PHILOSOPHY AND THE BIRTH OF MODERN SCIENCE

## FILOSOFIA NATURALĂ ȘI NAȘTEREA ȘTIINȚEI MODERNE

Stephen Gaukroger, *The Emergence of a Scientific Culture. Science and the Shaping of Modernity 1210-1685*, Oxford University Press, Oxford, 2006, ISBN 0-19-929644-8, pp. ix+563

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The profound changes that marked the transformation of the *old* way of thinking into the *new* one, characteristic for the seventeenth-century philosophy, has been a heated theme of debate for various historians. Historians of ideas, as well as historians of science or of philosophy, have highlighted the birth of modernity in this period. Whether they called it the “Scientific Revolution” or not, all of them seem to agree in one respect. Namely, that the demise of Aristotelianism and its replacement with Cartesian natural philosophy and ultimately with Newtonianism produced both modern science and modern philosophy.

Stephen Gaukroger’s book enters into this heated debate with a very ambitious aim. Announced as the first volume of a projected five, *The Emergence of a Scientific Culture* covers a large timeframe ranging from the thirteenth-century reception of Aristotle in the European universities up to the few years before Newton’s publication of the *Principia*.

In this respect, one can quickly associate it with the earlier attempts to uncover “the origins of modern science” (Butterfield), “the metaphysical foundations of modern science” (Burt), or „the foundations of modern science in the Middle Ages” (Grant). [1] However, Gaukroger does not fall into the old debates which focused on continuity versus discontinuity or on the question whether we should call this change a Scientific Revolution or not. He announces from the very beginning that his “concern in this book is with the early stages of the redefinition of the nature and goals of enquiry” (p. 3). And he proceeds to this goal by defining the early-modern science as a combination between a particular kind of cognitive practice and a particular kind of cultural product. With this characterization in mind, Gaukroger is able to avoid the unresolved tensions between internalism and externalism that marked the traditional scholarly studies of this period. However, this is something we should expect from the next four volumes, since, in this first tome, Gaukroger devotes most of the space to a discussion of the shifting values of natural philosophy between 1210 and 1685. While more emphasis on the institutional settings of this change would have been nice, it is not something to complain about in light of the scope of the entire project.

Gaukroger’s book is divided in five parts, with twelve chapters in total. The first part acts as an introduction to the project, describing the general outlines of this search for “the gradual assimilation of all cognitive values to scientific ones” (p. 11). Gaukroger sets his project within the larger context described above by trying to delimit his enquiry into the history of natural philosophy

from the traditional histories of science. Thus, in the second part of the book (Chs. 2-4), he provides a good discussion of the reception and transformation of natural philosophy in the context of Christianity. Time and again in medieval and scholastic thought, the relation between theology, metaphysics, and physics came to strains that are not easily solved. However, Gaukroger nicely shows us how the increased disciplinary shifts in the period were paralleled by a change in the meaning and scope of natural philosophy. In the entire part three of the book (Chs. 5-7), he presents the various meanings of natural philosophy, ranging from a more marked emphasis on matter theory to exercises in natural history. Gaukroger argues for a productive melange between the two at the core of natural philosophy, which allowed for a dramatic change in the seventeenth century (p. 249). Part four (Chs. 8-11) provides a well presented history of mechanics in the seventeenth century, which has its basis in Gaukroger's earlier works on Bacon and Descartes. The book ends with the problem of the quest for the unity of knowledge (Part V; Ch. 12), leaving the reader eager to read more about this transformation of natural philosophy into science.

In a nutshell, this is a very stimulating book on the history of natural philosophy, which despite the large period of time covered, offers a good – albeit rather traditional – explanation of how modern science took shape.

### References

1. See Butterfield, H., *The Origins of Modern Science: 1300-1800*, 2<sup>nd</sup> edition, Bell & Hyman, London, 1957; Burt, E.A., *The Metaphysical Foundations of Modern Science*, New York, 1932; and Grant, E., *The Foundations of Modern Science in the Middle Ages*, Cambridge University Press, 1996.