

**Mario Biagioli and Jessica Riskin (eds.)**

*Nature Engaged. Science in Practice from the Renaissance to the Present*  
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This collection of essays edited by Mario Biagioli and Jessica Riskin includes the contributions of some of today's major historians of early modern and modern science. These authors have at least two things in common: they all acknowledge that their work has been influenced by the historical approach developed by the American historian of science John Heilbron, to whom the book is dedicated, and they all adopt a pragmatic view of the history of science. As Riskin claims in her introduction to the book, historical pragmatism has emerged as a third way out of the opposition between two radical conceptions of science: a "rationalist" or "realist" view against a "relativist" or "constructivist" one. Here Riskin refers to the so-called "science wars" that involved many, but by no means all, practitioners of science studies at the end of the last century, after the emergence of cultural and social trends in the interpretation of science and scientific knowledge. These wars, which concerned issues such as the source of scientific credibility and trust, the truth value of knowledge claims and the alleged specificity of scientific activity, were a new development of a lasting confrontation between scientific and humanistic cultures, indicated as the "two cultures problem" after Charles P. Snow's famous essay of 1959.

Historical pragmatism aims at overcoming the opposition between irreconcilable ways of looking at science, either as a specific epistemic enterprise quite distinct from other forms of human culture, or as an activity with no peculiarities or differences with other kinds of social practices. For the contributors to this book, science is a mingled yarn, "no more separable into discrete parts (natural vs. social, objective vs. subjective) than the thread of life" (p. 3). Their approach is profoundly historical in terms of focusing on the contextual and contingent aspects of scientific knowledge, and it is pragmatic in terms of understanding the mutual engagement and permeation of scientific activity with society and culture at large. Hence the great variety of topics dealt with in the essays contained in the book.

The book is divided into four parts, which focus on different aspects of the mutual engagement of scientific activity with other dimensions of human life such as social conventions, legal affairs, historical practices, and worldly objects. Part I, titled "Conventions", includes a contribution by Ken Adler on the political and social aspects of the transition from 18<sup>th</sup> century cosmopolitanism, realized by the idea and reality of a Republic of Letters, to 19<sup>th</sup> century scientific internationalism. The papers by Hasok Chang and Michael Gordin offer an original reconstruction of the history

of two scientific results – the establishment of the boiling point of water and the birth of the periodic table – showing not only their conventional character, but also the complex and contingent nature of their history. In his contribution, Dominique Pestre relates the development of information-processing practices in Britain during World War II to the specific needs of the military and their collaboration with academic scientists.

Part II is dedicated to “Laws” and its essays examine the mutual shaping of legal and scientific concepts and practices. Matthew Jones deals with the origins of modern patent law through the case of Leibniz’s calculating machine, which played a major role in challenging traditional legal conventions related to scientific inventions. Mario Biagioli’s paper retraces the legal roots and rhetorical value of Kepler’s notion of eye-witnessing, as it emerged from his familiarity with inquisitorial law and was displayed in his astronomical observations. Focusing on a much more recent subject, Daniel Kevles examines the present regulation of property rights to genes, for which he makes a striking comparison with the history of a regulatory regime for railroads established in 19<sup>th</sup> century America. Remaining in the American context, Tal Golan deals with the mutual influence between epidemiology and law in courtrooms of the late 20<sup>th</sup> century.

Part III, titled “Histories”, is less rich in number of contributions but not in interest for the reader. It includes a paper by Anthony Grafton, who focuses on how astronomy and history mingled in Mercator’s work in the field of Renaissance chronology, and one by Paula Findlen, who re-examines the well-known history of Galileo’s trial from an original angle, namely the correspondence between one of his disciples and a Jesuit mathematician about the biography of Galileo and the meaning of this tragic event.

Finally, Part IV is devoted to “Things” and the material culture of science. Jessica Riskin deals with the role and epistemic scope of automata in Descartes’ mechanical philosophy, while Jim Bennett focuses on another type of early modern objects, the sundials, and describes how the design and construction of these instruments affected the knowledge and practice of cosmography. The last chapter of this part, and of the book, is written by Giuliano Pancaldi, who shows the complex and hybrid nature of William Thomson’s work in electricity and magnetism through the reconstruction of the history of his mirror galvanometer.

Taken together, these essays reveal the variety of topics and interests cultivated by current historians of science who share a historical and pragmatic approach to the discipline. In this regard, *Nature Engaged* is primarily addressed to young practitioners of science history, as well as to a broader readership interested in science and technology, who can have a grasp of what doing history of science means after the example of scholars like John Heilbron and after what Hans-Jörg Rheinberger (in his book *On Historicizing Epistemology. An Essay*) has recently called a “practical turn” in the study of science and its history.