
Massimiliano Badino

THE RELATIONSHIP BETWEEN THE PHILOSOPHY OF SCIENCE AND
THE HISTORY OF SCIENCE AND MAX PLANCK'S CASE

Abstract

In this paper the problem of the relationship between philosophy of science and history of science is discussed. By examining briefly the main philosophical positions about this relationship (in particular Grünbaum's, Kuhn's, Lakatos', Feyerabend's and Laudan's positions), we can ascertain that the main difficult in understanding this relationship is to reduce to a misleading use of normative-descriptive distinction and to a thesis we define *the thesis of mutual completeness*. According to this thesis the philosophy of science and the history of science complement one another. Two arguments against the normative-descriptive distinction are presented and we propose to substitute the thesis of mutual completeness with the thesis of mutual constitution. For this aim we will analyze and consider two famous distinctions: the distinction between the context of discovery and the context of justification and the distinction between internal history and external history. Then a new taxonomy is proposed which replaces the philosophy-history of science dichotomy with the concept of "theory of science" and which links this concept to the previous distinctions (normative-descriptive, internal-external) opportunely reconsidered. We obtain a taxonomy constituted by theories of science external-normative, internal-normative, external-descriptive and internal-descriptive. Finally an example of close interaction between philosophy of science and history of science is considered: the historical case of Planck. We provide a philosophically founded hypothesis about the reasons that drove Planck to adopt the Boltzmann's probabilistic definition of entropy, a decisive step in the direction of the blackbody radiation law derivation.