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Book review

Science and its Historicity¹

Condé, Mauro L. *“Um Papel para a História”: O Problema da Historicidade da Ciência*. [“A role for the History”: *The Problem of the Historicity of Science*]. Curitiba: Editora Universidade Federal do Paraná – UFPR, 2017. 171 p. R\$ 30,00 ISBN: 978-85-8480-116-9

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This is a book on the historicity of science. To say that science has a history may at first glance seem like a great triviality. For the simple fact of being a human construct, science was not born yesterday and has always undergone several changes in its most varied aspects; what we understand today as “science” has resulted from a long and repeated process involving continuities and ruptures with what preceded it – we all know about that, and this is enough to admit that science has a history.

But it is by no means trivial that science has, besides an ordinary history, a certain historicity. It might well happen that to have a history was only a matter of fact about science, so that the ties with its past would be nothing more than mere contingencies. Or again, it would not be unthinkable that the reach of historical circumstances to which science is subject did not exceed the more superficial or visible level of that activity – usually the one to which the layman has access and which constitutes the public image of the scientist’s work, such as laboratory practices, technological applications, etc. – in such a way that science, let us say, in itself would be minimally unaffected by these historical vicissitudes. In that case, it would no longer be imposing to admit that science has a history. The approach proposed by Condé in *“A Role for the History”: The Problem of the Historicity of Science*, however, does not recommend this interpretation at all. For our author, the historicity of science is definitely not a mere contingency. On the contrary, it must be admitted as a matter of law over science, that is, a *sine qua non* condition for science to be what it is, from any point of view.

¹A first version of this book review was published in Portuguese as the foreword of the book *“Um Papel para a História”: O Problema da Historicidade da Ciência* [“A Role for the History”: *The Problem of the Historicity of Science*]. I would like to thank the Editora Universidade Federal do Paraná [Editora UFPR] for its kind permission to print it again in this English version.

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In general terms, the purpose of this book is to sustain “the perspective that the history of knowledge affects [that is, conditions] its final result”. To admit that history is a condition for the outcome of scientific investigations, means to assert that if history were otherwise, it is probable that certain results might not exist. As the reader will soon realize in the first few paragraphs to follow, our author is inclined to favor the stronger interpretation of this statement: without history, without science. The great source of inspiration for Condé’s ideas on the historicity of science were the analyzes of one, until a short time ago, unknown Polish scientist and intellectual named Ludwik Fleck (1896-1961). For Fleck, in Condé’s words, “there is no knowledge outside of its history”. But Fleck’s thesis claimed by Condé has another condition prior to historicity: “there is no knowledge outside the social”. In other words, knowledge does not occur as a relationship of a solitary subject to an isolated object, both disconnected from all social ties, such as family, economic, cultural, ethnic, religious, aesthetic, and other identities. On the contrary, these various social factors are necessary conditions for knowledge, in general, and for science in particular.

The defense of a close nexus between science, history and society has nevertheless been the fortune and misery of philosophers, sociologists, and historians of science in the last decades. In this book the reader will have the opportunity to accompany with unusual richness of detail, the major episodes in the recent history of this field of science research – which Fleck has suggestively called the “science of science” and which, more recently, the contemporary historiography has renamed as *science studies*. One of the main protagonists of this process was the American physicist and philosopher Thomas Kuhn (1922-1996). Kuhn, in addition to being responsible for the rediscovery of Fleck’s texts, was also the main forerunner of the “new image of science” built from the idea of historicity. However, Kuhn was perhaps the strongest critic of those philosophers, sociologists, and historians who radicalized this view to the point of reducing science to a “negotiation” among their agents (scientists, engineers, public managers, capitalists, etc.). The relevance of Kuhn’s ideas to the historiographic and analytic project developed by Condé is therefore based on avoiding the misunderstandings of the underestimation of the historicity of science as well as its overestimation.

Let us see an example that illustrates how the underestimation of its historicity gives rise to a distorted image of science. This example has been taken from a recent publication with wide repercussions in Brazil. This is a segment from the Presidency of the *Brazilian Society for the Advancement of Science* (SBPC) addressed to the Federal Chamber, criticizing a bill that allowed the teaching of creationist doctrines in science classes at the elementary school level. The line of contention adopted by the SBPC initially allows us to assume that the historicity of science would occupy a prominent place in its argument by maintaining that “the discovery and understanding of the evolution process represents one of the greatest achievements in the history of science”. This is a mistake. A few more paragraphs follow and then we can read:

Creationism is not a scientific theory, it does not satisfy the essential condition of being tested, refuted, confronted with reality by means of observations and experiences, in such a way that one can verify whether its statements are in accordance with the facts. According to Popper, “the criterion of scientificity of a theory lies in the possibility of invalidating it, refuting it, or even testing it”. Systems that cannot be refuted are not science, they are dogmas.³

³Of. SBPC-122/Dir. November 28, 2014, São Paulo. Available in: http://www.sbpnet.com.br/site/arquivos/arquivo_402.pdf. Consulted January 12, 2015.

However, the reader does not think that evolutionism and its possible virtues will be the subject of discussion in this book. Neither here, nor further on, what matters is not evolutionism itself nor any of its possible rival systems. This recent episode of the famous debate was exclusively invoked here to serve the purpose of illustrating, with an example, the unfortunate frequency with which scientists, even the most dedicated and zealous ones, state impoverished opinions about their own work. It is curious that they do not suspect that some of the “greatest achievements in the history of science” could not be sustained if they were effectively subjected to the rigor of the Popperian falsification test; not by negligence of its proponents, but by mere practical impracticability. And yet this fact would have little or no effect on scientificity – or, if one prefers, rationality – on any of those “greatest achievements” in the history of science.

This book, by providing a complete historical picture of philosophical, historiographical, and sociological debates that have provided far more sensible alternatives to explain that certain achievements of science are larger and more impactful than others, provides an excellent guide for all those who are dissatisfied with such an impoverished image of science, as that above and of its subsidiaries. *“A Role for the History”: the Problem of the Historicity of Science* will also show that the misunderstanding in these matters is not, however, an exclusivity for those who underestimate the relevance of the historicity of science. It also occurs among those who overvalue it.

To counteract the overvaluation of the historicity of science – which, for the most part, corresponds to the conceptions gathered under the label of “relativists” – Kuhn once performed an exercise which, in general, few critics bother to do. He set out not only to point out the weaknesses of his opponents’ arguments, but also to understand why they thought the way they thought and, most importantly, why they came to such unreasonable conclusions – “mad deconstruction” in Kuhn’s own words.

To identify the source of the risks involved in overestimating the historicity of science, Kuhn argued that relativists thought the way they thought because, early in their analysis, they adopted a very impoverished image of science. Facing science from this impoverished image, it was predictable that they could find no correspondence between this image and the results gathered through their historical and sociological research of science. The next step would be to denounce the misleading nature of the adopted image, which would, in general, nullify any possibility of science being viewed as an enterprise governed by rational parameters. It was left to them, after all, to proclaim social factors as the only ones capable of explaining and sustaining scientific practices.

On the basis of this reconstruction of the strategy of argumentation employed by certain philosophers, historians, and sociologists, so-called “relativists”, Kuhn wanted to show that, in order to deal with this way of thinking, it is not enough to refute their arguments; it is also necessary to articulate a new point of departure on the nature and dynamics of scientific practices that justify both its historicity and its rationality. I believe that Mauro Condé’s reflections in this book should provide readers with something of similar relevance.

In a direct way, Condé fights relativism with the thesis he collected in Fleck’s texts: the historicity of science. For the Polish author, this is not a simple methodological thesis. It is a genuine epistemological thesis, which means that it is something deeply rooted in the very concept of knowledge. Adopting this or that method may be a mere matter of opportunity or convenience, and several different methods can lead to the same result. But this does not occur with the concept of knowledge. If we consider knowledge to be essentially a social practice, we will have to analyze science from the social relations in which it is embedded. But if, on the contrary, we consider that knowledge is a private relation between an individual and any object, we must, with all the losses involved, be able to imagine a conception of knowledge adjusted to authentic Robinsons Crusoe living solitarily in his cognitive insulations.

Considering the thesis of the historicity of science as an epistemological thesis, Condé believes that it can play the role of imposing a better resistance to the historical and sociological relativism already combated by Kuhn. Perhaps this is the most original and insightful aspect of the analysis presented to the reader. In order to articulate his answer to Kuhn's challenge to the need for a "new image of science", Condé draws inspiration from the latest works of the celebrated Austrian philosopher Ludwig Wittgenstein (1889-1951), according to which, to occupy a central position in the structuring of human relations and productions, language should be investigated not from a logical point of view, but from the point of view of the ordinary language, from its use and the meanings it incorporates. Wittgenstein recommended, among other things, that language and its grammar (taken here in a broader sense than the simple record of the rules of grammar from a particular language) be adopted as the starting point and arrival of any philosophical analysis. In keeping with this perspective, Condé trusts that an authentic "new image of science" must emerge precisely from a type of "grammar of science", designed to allow us to think that science "constitutes its own rules of operation and thus it is autonomous, although not independent of the society that created it".

One sees, then, that the originality of the investigative trajectory of Condé lies, in particular, in the way in which he proposes to radicalize the criticism of relativism. In this regard, Condé considers that even Kuhn's criticisms of relativism did not reach the radicality sought after because the American philosopher remained faithful to the Kantian approach, which means not abandoning the transcendental treatment of knowledge in favor of the grammatical treatment recommended by Wittgenstein. The obvious advantage of this way of proceeding would be to recover the possibility of facing the adversary in his own field, since, as Condé never fails to point out and contests, certain versions of sociological relativism also claim Wittgenstein's ideas as one of his main sources of inspiration.

For all this, the book "*A Role for the History*": *the Problem of the Historicity of Science* brings together all the elements to multiply the perspectives and divide the opinions on the recent studies on the sciences. By provoking divergent non-linear views from analyzes constructed from a single point of view, this book will favor the recognition that both relativists and their traditional critics, risk wrecking the indispensable historicity of science into complete irrelevance – even if they do so for reasons diametrically opposed; in one case for overestimating it, and in the other, for underestimating it. The reader will have the opportunity to recognize why this debate is not resolved as a simple "coin toss", that is, as if our alternatives were summarized on only two sides, symmetrical and, in a way, complementary. But for this, it will be important to be prepared to honestly suspect that science is nothing like any of its many images of broad mediatic appeal, and that therefore it is always urgent to renew the critical exercise of confronting your convictions and your doubts with solid alternatives. A reader eager to embark on this critical adventure will find in these reflections of Condé a counterpoint of special interest and utility.