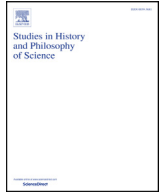




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State of the Field

## The many encounters of Thomas Kuhn and French epistemology

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## ABSTRACT

The work of Thomas Kuhn has been very influential in Anglo-American philosophy of science and it is claimed that it has initiated the historical turn. Although this might be the case for English speaking countries, in France an historical approach has always been the rule. This article aims to investigate the similarities and differences between Kuhn and French philosophy of science or 'French epistemology'. The first part will argue that he is influenced by French epistemologists, but by lesser known authors than often thought. The second part focuses on the reactions of French epistemologists on Kuhn's work, which were often very critical. It is argued that behind some superficial similarities there are deep disagreements between Kuhn and French epistemology. This is finally shown by a brief comparison with the reaction of more recent French philosophers of science, who distance themselves from French epistemology and are more positive about Kuhn. Based on these diverse appreciations of Kuhn, a typology of the different positions within the philosophy of science is suggested.

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The reactions provoked by Thomas Kuhn's book, *The structure of scientific revolutions* [...] would provide high-quality experimental material for an empirical analysis of the ideologies of science and their relationship with their authors' positions in the scientific field. (Bourdieu, 1975, p. 38)

## 1. Introduction

It is an often stated fact that philosophy of science changed with the publication of Thomas Kuhn's *The Structure of Scientific Revolutions* (SSR) in 1962. This book has been considered the start of a 'historical turn' in philosophy of science. Followed by authors such as Imre Lakatos and Paul Feyerabend, the message was that, in order to do philosophy of science, one also needs to do history of science.

This was the case in Anglo-American philosophy of science, but in Continental Europe the situation was quite different.<sup>1</sup> Especially in France, SSR was not seen as a revolution, but rather as a confirmation of what was already known. As Gary Gutting states, the "French could hardly share the excitement of what they rightly saw as old news." (Gutting, 2003, p. 46) Similarly, Ian Hacking claims

that "Kuhn was a sensation for us, but rather old hat in France." (Hacking, 2002, p. 93) A historical approach, indeed, is the norm in French philosophy of science or 'French epistemology'.<sup>2</sup> This is mainly due to the specific educational institutions in France, where history and philosophy of science were always closely linked, and students of philosophy were encouraged to combine the study of philosophy with that of a specific science (see Chimisso, 2008). Thus, authors such as Gaston Bachelard or Georges Canguilhem were already doing something very similar to Kuhn, namely trying to understand physics or biology by examining their specific historical developments.

In this sense, one could claim that we are witnessing a synthesis between Continental and Anglo-American philosophy of science. Kuhn himself, for instance, states that

I suspect that anyone who believes that history may have deep philosophical import will have to learn to bridge the long-standing divide between the Continental and English-language philosophical traditions. (Kuhn, 1977, p. xv)

More recently, Anastasios Brenner has pointed at such a unification, first of all because Anglo-American philosophy has become

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<sup>1</sup>For the reception of SSR in Anglo-American philosophy, see Kindi and Arabatzis (2012) and Richards and Daston (2016).

<sup>2</sup>In France the term 'epistemology' refers to philosophy of science. The term French epistemology is used here to distinguish it from 'historical epistemology,' which also includes authors such as Lorraine Daston or Hans-Jörg Rheinberger (see Hacking, 2002; Rheinberger, 2010).

more historical. “They reject the continuism [within the history of science] of the logical positivists, just as Bachelard and Koyré have rejected that of their predecessors.” (Brenner, 2006, p. 115)<sup>3</sup> Brenner speaks of a movement of ‘post-positivism’ within analytic philosophy, which “could be seen as moving closer to historical epistemology.” (Brenner, 2015, p. 210)<sup>4</sup> At the same time, he notices how French epistemology has become more analytic and logical. Authors such as Jules Vuillemin or Gilles-Gaston Granger actively discussed, introduced and translated the work of authors such as Bertrand Russell, Ludwig Wittgenstein and W.V.O. Quine.<sup>5</sup> Recent authors such as Hacking or Hans-Jörg Rheinberger embody for Brenner this unification by actively combining both traditions.

Brenner argues that the divergence was historically caused by a cultural barrier, referring to such things as language or institutions (Brenner, 2015). Both traditions, according to him, share the same intellectual roots in discussions around the conventionalism of authors such as Henri Poincaré, who influenced both French epistemology and the Vienna Circle (Brenner, 2003). But since both sides are discovering one another, the dichotomy is disappearing. Rather we “may combine both methods: logically reconstructing the reasoning behind historical explanation, and submitting logic to historical inquiry.” (Brenner, 2015, p. 211)

Nevertheless, the situation is too complex to be described merely in terms of a cultural barrier. By focusing on the cultural differences, one tends to overlook the argumentative differences. Although there are signs of both traditions coming closer together, there are clear tensions as well. This article illustrates this tension by mapping the specific link between the work of Thomas Kuhn and French epistemology, paying particular attention to his book *SSR*. This link will be explored in both directions. The first part will briefly examine the extent to which Kuhn was inspired by French epistemology. It will be argued that there is a connection here, but not with the most famous French epistemologists, such as Bachelard or Canguilhem.

More interesting and less explored is the influence in the opposite direction. The second part will therefore focus on how French epistemologists have discussed and evaluated *SSR*, focusing on authors such as Bachelard, Canguilhem, Foucault, Bourdieu and Althusser. There are three reasons why these reactions might be revealing. First of all, they can clarify the often debated and unclear position of Kuhn himself. Secondly, they give us a unique insight into the different approaches to philosophy of science. Finally, they can show the differences among French philosophers themselves. This will be done by confronting French epistemology with the work of more recent French authors, such as Bruno Latour and Isabelle Stengers. Based on these specific appreciations of *SSR* I will briefly suggest a typology of the different positions in philosophy of science.

## 2. Was Kuhn inspired by French epistemology?

The influence of French epistemology on Kuhn has been the subject of previous studies. Garry Gutting, for instance, states that the “one movement in twentieth-century European thought that has substantive affinities with Kuhn’s work is the French tradition

<sup>3</sup>All French quotations are translated by the author, unless when referring to existing translations.

<sup>4</sup>For a different history of ‘post-positivism,’ see Zammito (2004). Zammito is very critical of contemporary post-positivist programs within science studies, which were inspired by Quine and Kuhn, but resulted in indefensible postmodernism. However, he ignores this French tradition of post-positivism, which might offer a more viable alternative.

<sup>5</sup>Other (and earlier) examples that Brenner does not mention are Robert Blanché, Jean Largeault or François Russo.

of philosophy of science.” (Gutting, 2003, p. 45) According to Gutting, Bachelard proposed a discontinuist reading of the history of science akin to Kuhn’s and, similarly, Bachelard claimed that a scientific revolution results in a new worldview and new scientific norms (e.g. Bachelard, 2002). For Gutting, these authors cannot only be seen as a source of inspiration, but also as a possible correction of Kuhn’s problems with relativism and incommensurability. Bachelard, in fact, proposed a philosophy which combines discontinuity and rationality, and thus evades certain forms of relativism.

Nevertheless, Kuhn himself rarely mentions Bachelard. In fact Kuhn mentions him only once, referring to Bachelard’s thesis study on heat (Kuhn, 1977, p. 219n63; Bachelard, 1927). Only in a few interviews did he highlight his relation to Bachelard, stating for instance that “I did read some Bachelard. But it was so close to my own thought that I did not feel I had to read lots and lots more.” (Kuhn, 1994, p. 160) In another, posthumous published interview, Kuhn recalls meeting Bachelard in Paris around 1950, an encounter that turned into a failure. With a letter of recommendation from Alexandre Koyré, he visited the apartment of Bachelard. “A large burly man in his undershirt came to the door, invited me in; I said, ‘My French is bad, may we talk English?’ No, he made me talk French. Well, this all didn’t last very long.” (Kuhn, 2000, p. 285)<sup>6</sup> Although he thought that there were interesting similarities, and later read more of his work, Kuhn merely states that the framework of Bachelard is too constraining and too systematic.

Therefore, the claim of any influence of French epistemology on Kuhn becomes problematic. This assertion, however, is not only based on similarities in themes and ideas, but also on remarks by Kuhn himself. For instance, Kuhn states that “the early models of the sort of history that has so influenced me and my *historical* colleagues is the product of a post-Kantian European tradition which I and my *philosophical* colleagues continue to find opaque.” (Kuhn, 1977, p. xv)

But what authors did he have in mind? Besides Ernst Cassirer, he mainly mentions French epistemologists, but not Bachelard or Canguilhem. In the preface of *SSR*, for example, he refers to Alexandre Koyré, Émile Meyerson and Héléne Metzger. “More clearly than most other recent scholars, this group has shown what it was like to think scientifically in a period when the canons of scientific thought were very different from those current today.” (Kuhn, 1970a, p. vi)<sup>7</sup> However, as the quotation above indicates, he sees these authors mainly as an inspiration for writing history of science, and not for their philosophical positions:

There have been philosophers of science, usually those with a vaguely neo-Kantian cast, from whom historians can still learn a great deal. I do urge my students to read Emile Meyerson and sometimes Léon Brunschvicg. But I recommend these authors for what they saw in historical materials not for their philosophies, which I join most of my contemporaries in rejecting. (Kuhn, 1977, p. 11)

Thus, the lessons for the new historiography of science did not arise from scientists nor historians. “Instead, they have come from philosophy, though mostly like Koyré, from Continental schools where the divide between history and philosophy is by no means so

<sup>6</sup>Kuhn also states that the “only thing of his I’d read [at that moment] was that *Esquisse d’une Problème Physique*, I think it’s called.” (Kuhn, 2000, p. 284) The editors wrongly refer to the book *La philosophie du non*.

<sup>7</sup>Other non-French authors he mentions are Butterfield, Cavell, Crombie, Dijksterhuis, Fleck, Lovejoy, Maier and Polanyi. I have, however, excluded them here from the discussion. The comparison with Fleck is made often, including by Kuhn himself. For a discussion, see Braunstein (2003) and Mößner (2011).

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